Florida WILDLIFE

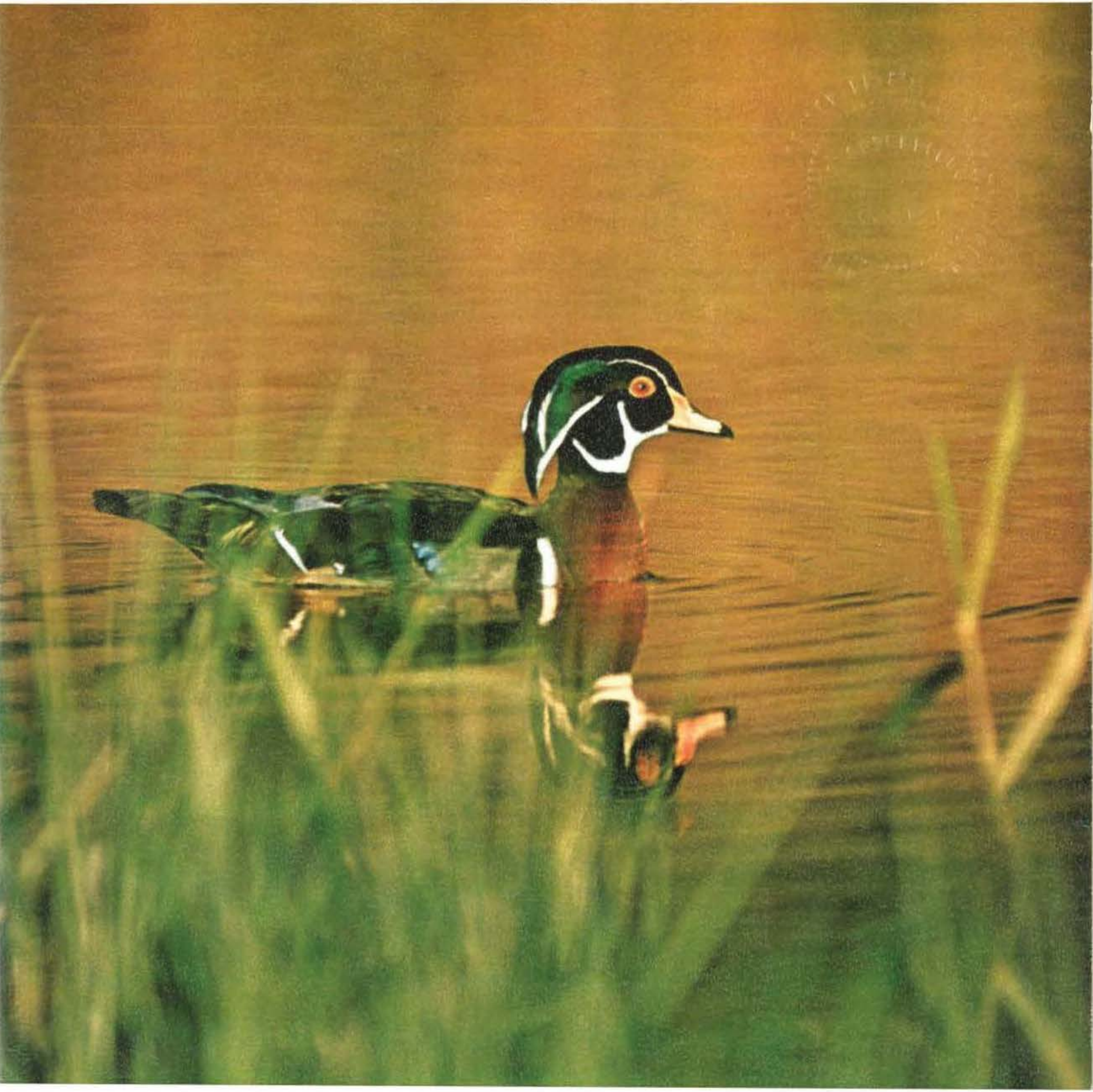
Beaver on the Suwannee
Death of Lake Apopka

Fishing · Hunting · Conservation · Outdoor Recreation

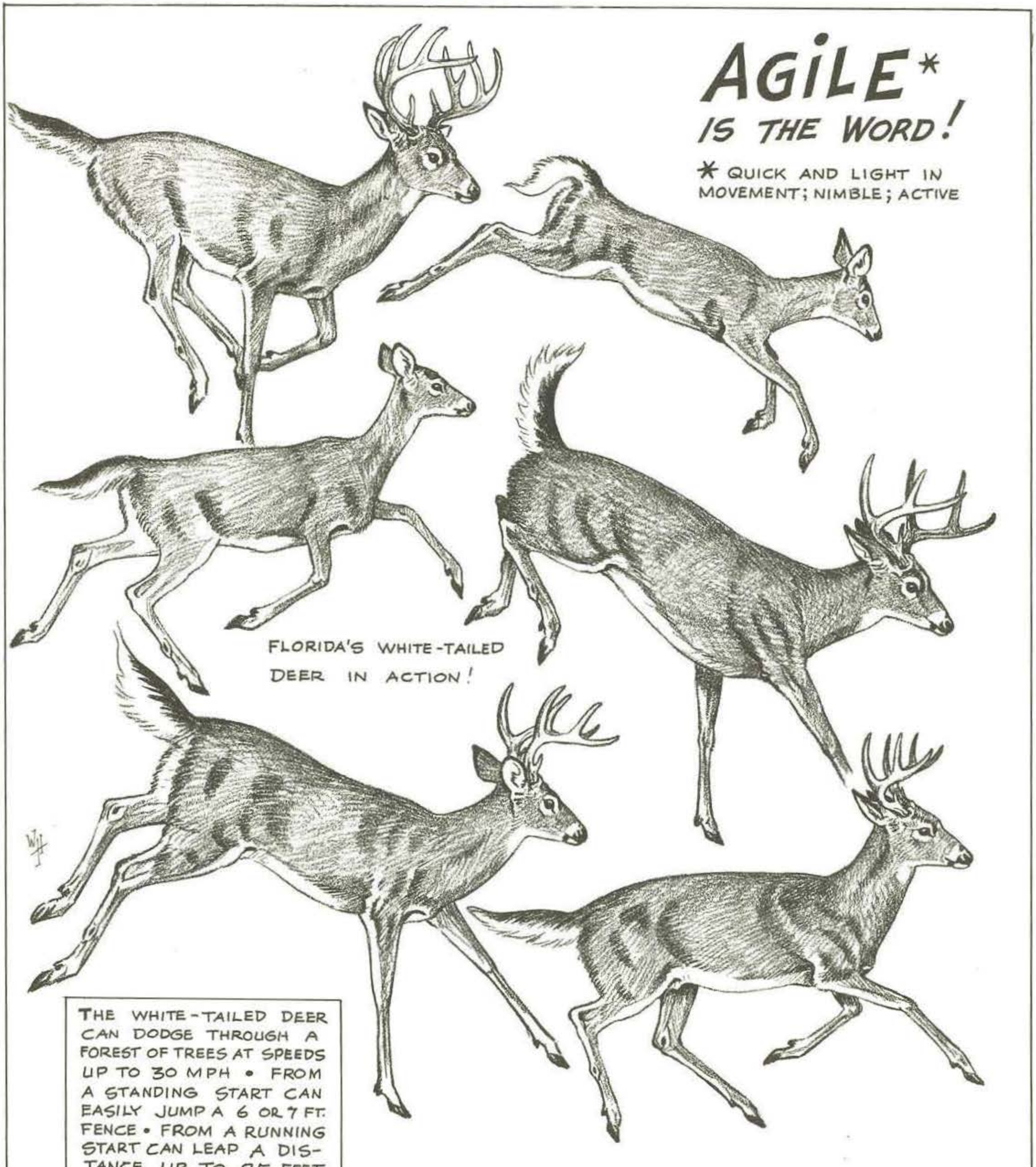
MARCH 1974

The Florida Magazine for all Sportsmen

35 CENTS



Florida Wildlife Scrapbook



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IS THE WORD!

* QUICK AND LIGHT IN MOVEMENT; NIMBLE; ACTIVE

FLORIDA'S WHITE-TAILED DEER IN ACTION!

THE WHITE-TAILED DEER CAN DODGE THROUGH A FOREST OF TREES AT SPEEDS UP TO 30 MPH • FROM A STANDING START CAN EASILY JUMP A 6 OR 7 FT. FENCE • FROM A RUNNING START CAN LEAP A DISTANCE UP TO 25 FEET

FLORIDA WILDLIFE MAGAZINE • FLORIDA GAME AND FRESH WATER FISH COMMISSION

Florida WILDLIFE

VOL. 27, NO. 10

MARCH 1974

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Publications Department

GENE SMITH *Editor*

WALLACE HUGHES *Art Director*

MORRIE NAGGIAR *Editorial Assistant*

C. C. O'BRYAN *Production Assistant*

C. L. SATTERFIELD *Circulation*

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The Cover

The male Wood Duck is the Beau Brummel of the waterfowl world; his bright colors literally flash in the sunlight. Many woodies breed in Florida, and they accept aid in housing from conservationists. See next page.

Ektachrome Photo by William J. Weber

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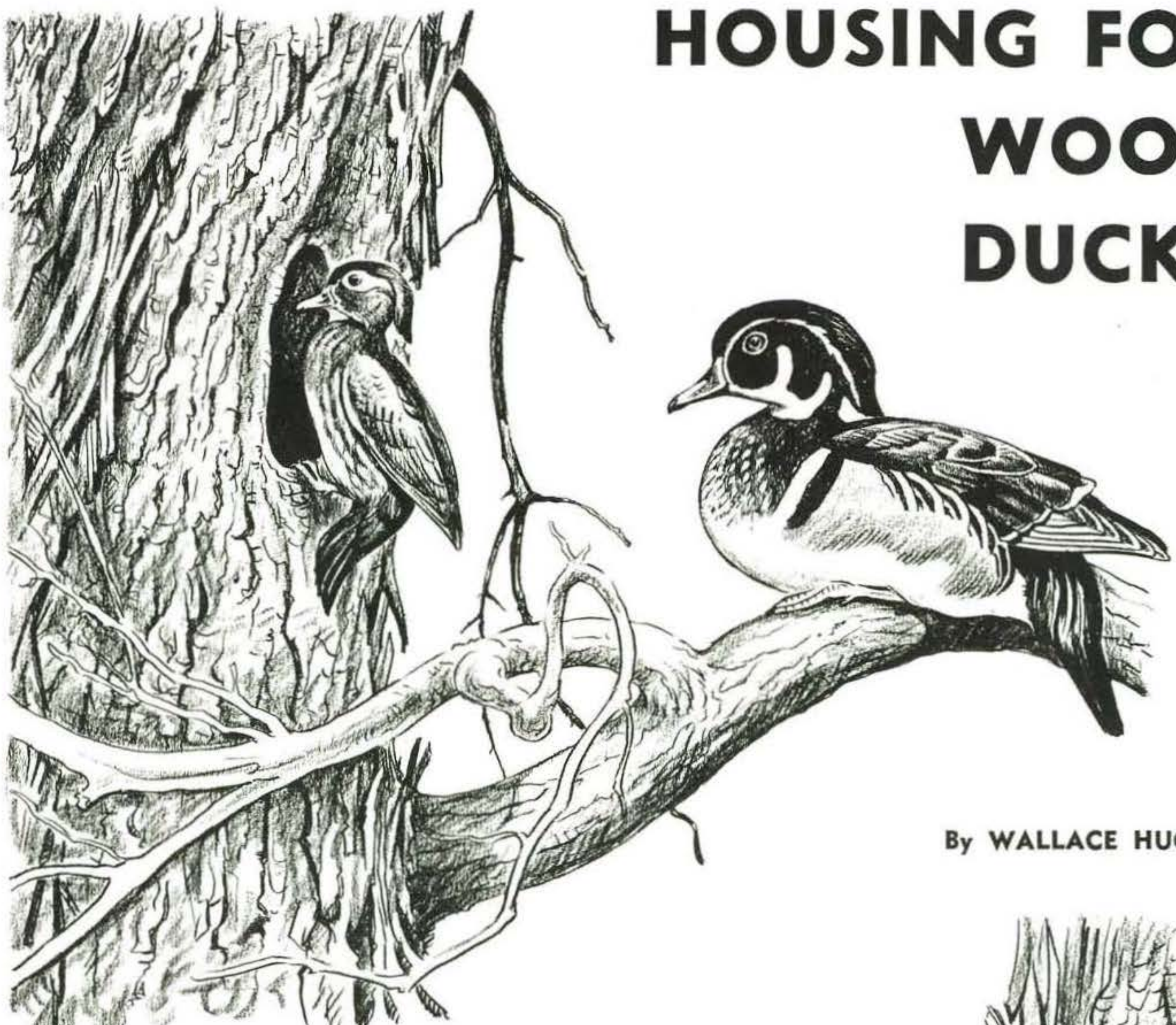
HOUSING FOR WOOD DUCKS

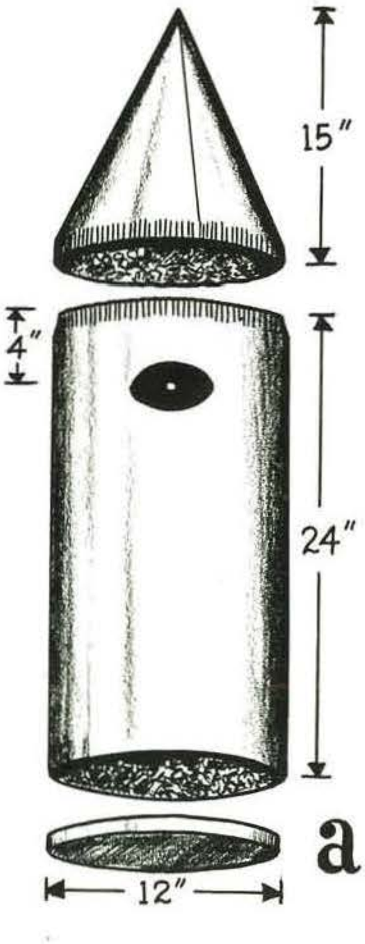


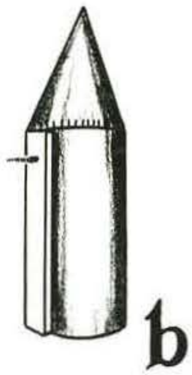
By WALLACE HUGHES

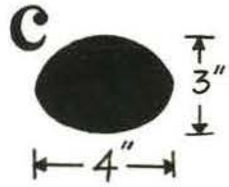
Unlike most other waterfowl, the wood duck nests in holes in trees. The shortage of suitable nesting places is the most important factor limiting the abundance of the woodie. A year-round resident of Florida, this most colorful of our native waterfowl readily adapts to substitute hollows in the form of nest boxes. Conservation-minded individuals and groups can provide a real boost to the wood duck population by building and placing nest boxes.

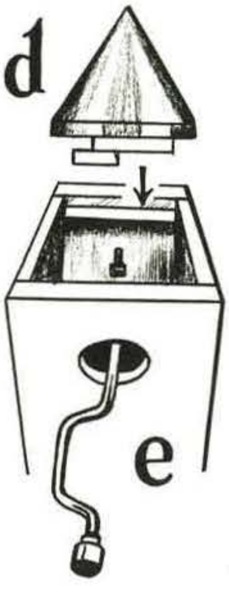
Nesting Habits: Starting in the latter part of February and on through early April, the female wood duck and her more colorful mate begin their annual search for a place to nest. They will readily accept either a natural cavity in a tree or stump, or a manmade nesting box. Upon selecting a nesting place, the female proceeds to line the floor with down plucked from her breast. After the 8 to 15 eggs are laid and incubation begins, the male will desert his spouse, leaving her with the chore of hatching the eggs and caring for the young. The incubation period runs from 28 to 30 days.

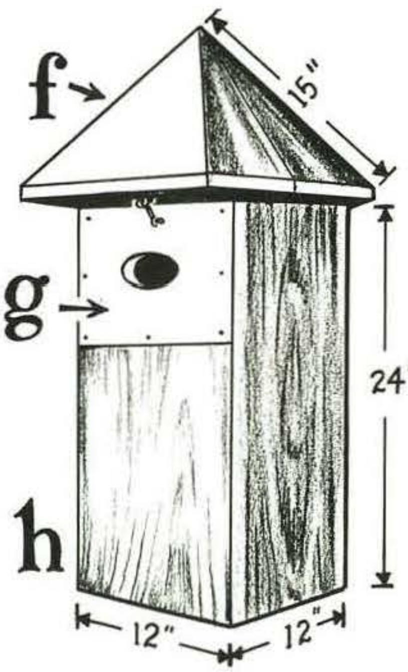
Usually within about 24 hours of hatching, the down of the ducklings is dry and they are ready to leave the nest. Coaxed by the mother, the baby woodies leap one after another from the entrance of the nest to the ground or water below. Some nest holes are as high as 50 feet up, and regardless of the height or type of landing place, the youngsters accomplish the leap without injury. Some nests are located as much as one-half mile from water, in which case the young follow the mother to the nearest body of water.





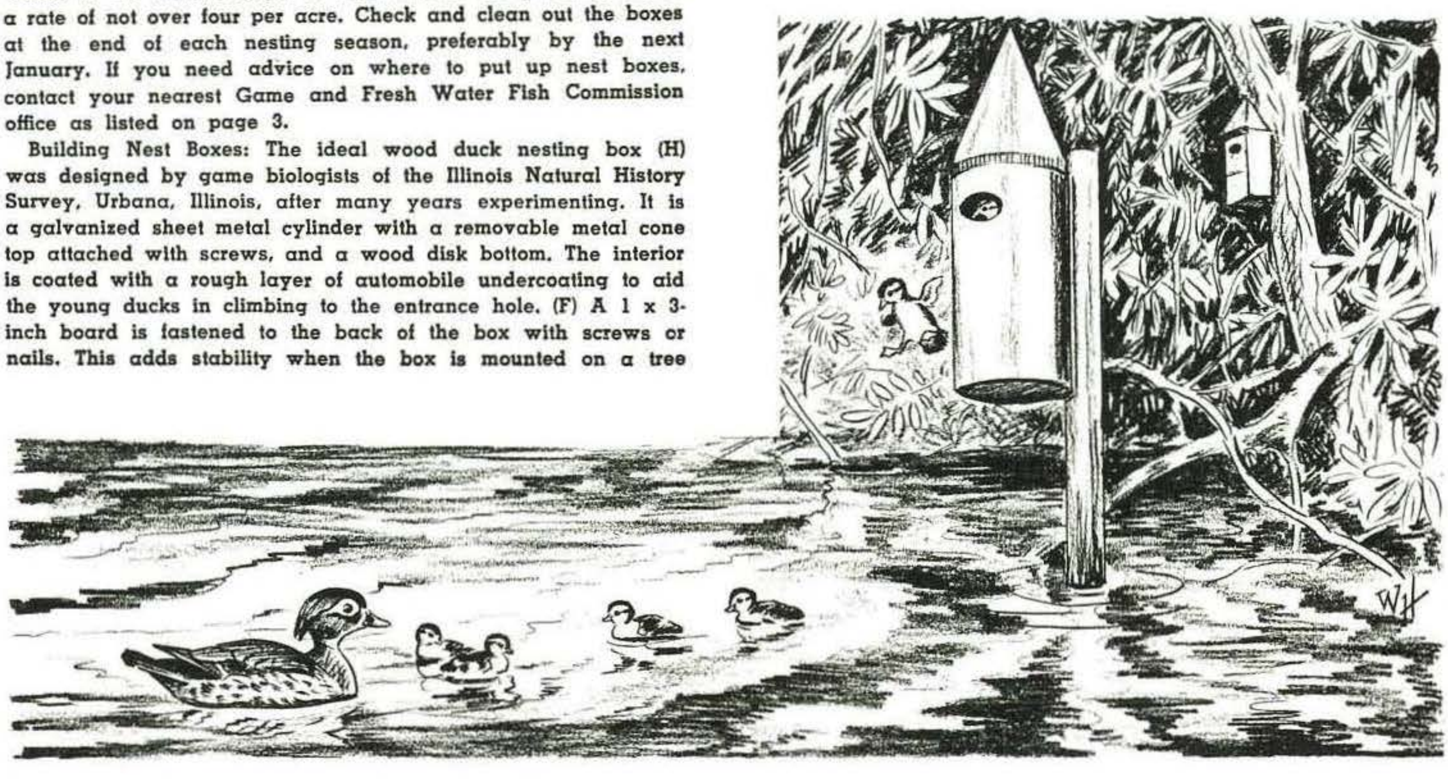






Placing Nest Boxes: Proper location is an all-important factor when putting up nesting boxes. Tree-bordered lakes, ponds or streams, and swampy wooded areas are all home for the wood duck. For nesting sites they prefer large trees with spreading branches, and like to fly through an open canopy of branches and leaves when going to their nests. They also like to perch on large horizontal limbs at or near their nesting place. Put nest boxes 10 to 25 feet up on tree trunks which are situated in the water, at the water's edge, or within 50 to 100 yards apart, at a rate of not over four per acre. Check and clean out the boxes at the end of each nesting season, preferably by the next January. If you need advice on where to put up nest boxes, contact your nearest Game and Fresh Water Fish Commission office as listed on page 3.

Building Nest Boxes: The ideal wood duck nesting box (H) was designed by game biologists of the Illinois Natural History Survey, Urbana, Illinois, after many years experimenting. It is a galvanized sheet metal cylinder with a removable metal cone top attached with screws, and a wood disk bottom. The interior is coated with a rough layer of automobile undercoating to aid the young ducks in climbing to the entrance hole. (F) A 1 x 3-inch board is fastened to the back of the box with screws or nails. This adds stability when the box is mounted on a tree trunk or pole. Size of the entrance hole (G) conforms to the body of the female duck, and also keeps out raccoons. Keep measurements exact as shown. (A) Illustrates an excellent nest box made of cypress lumber. A strip of hardware cloth nailed below the entrance hole, on the inside, gives the ducklings a foothold when ready to climb out. The pyramid-shaped roof (C) should overhang about 6 inches at the front, 2¾ inches at the sides, and 1¾ inches at the back. It should be covered smoothly with thin sheet metal. (D) Shows method of attaching roof to box. Lip under at the back and lock with hook and eye fastener on the outside front. Area around the entrance hole should be covered with sheet metal (B) to repel raccoons. To make it snake and squirrel proof it is necessary to cover the box completely with sheet metal. (E) Shows method of fastening to tree trunk or pole. Use 4- to 6-inch long lag screw. Screw down tightly with speed handle socket wrench. Boxes should be supplied with a 3-inch layer of sawdust, wood chips, or shavings.



THE BUSINESS OF CONSERVATION

THE FOLLOWING ARE remarks of former Commissioner James B. Windham, of Jacksonville, upon leaving the Commission at the expiration of his 5-year term. He spoke at the monthly business meeting of the Commission held at Tallahassee on February 8, 1974:

"It has been a great pleasure serving with my fellow commissioners over the past years, and I want to say about the incoming commissioner that I don't think you could find a finer person from Jacksonville than Mr. Thomas. I think he brings with him a great deal of astuteness, and I think he is a person who will be warmly received by the Commission, and who will add greatly to it.

"To the staff, I say that I think you have enriched my life a lot more than I have enriched yours, because through the years I have learned a lot in matters of conservation and ecology, and it is through your help that this has been possible. I have never served with a group in any capacity that has been more dedicated and a more honorable group than you. Certainly you have given more than you received, given more of yourselves, given up your families' time, and have served long and hard hours to do a job that you are dedicated to do and are probably paid less than any other state agency to perform that duty.

"There are two things that I would like to mention. If this Commission is going to survive in the future, number one is the habitat. It is increasingly important that you as commissioners bear your responsibility to see that the habitat does not decrease in size. If possible, increase it for the sportsmen of the State of Florida. You have been charged with this burden, and I hope that you will take this responsibility. I know that all of you are prudent businessmen, and you are great people, and you will certainly do everything within your power in working with the various sportsmen's groups and other groups that are interested in wildlife, conservation, and ecology to see that the habitat is preserved.

"There is another thing that I hope will never happen in this Commission. Article IV, Section 9, of the State Constitution puts upon your shoulders this responsibility, that this would be an autonomous body—and this has twice been approved by the citizens and sportsmen of the State of Florida by referendum vote—and I think the real success of this Commission has been because it has remained an autonomous body. I sincerely believe that this Commission will only survive so long as partisan politics play no part and that you are able to make your own decisions as businessmen, wise and prudent in your various departments. There is a variety serving on this Commission in various business capacities, and you are to give the leadership to this Commission, and to help the people with your particular knowledge, to put all of this together, with the other expertise of the staff, so that this Commission can go forth and be great in its own way.

"I am sure that each one of you will shoulder this responsibility without any qualms, and that you will come up and vote your convictions and uphold the sportsmen of the State of Florida and its great citizens, and do the things that should be done in the correct manner.

"I would like to say in closing that the most helpful progress, however, is a different kind, and that is the progress of human understanding. There is a growing realization that the environment must be looked at as a whole, and there must be the willingness to foresee that action taken by this Commission in one place may have consequences some place else. There is a growing awareness that living things are bound together in what we shall call 'webs of life,' and that we are a part of this web of life. In a sudden sense, the time is growing increasingly short, and I hope that you, along with the help of the staff and all the means that you have at your hands, will decide on a course of action before it is too late to turn back. Once the alligator is lost, which is one of the oldest living reptiles that we know, once the bald eagle is gone, or any other species of fowl or game is gone, it is gone forever.

"The same applies to our wilderness areas. This is a place where a human being can go for a few leisure hours to enjoy and renew the human spirit that makes man feel a part of the earth. God has given us this right. I hope that before it is too late we will think of the overall situation. I remember at Christmastime when I was buying gifts for people, I bought them probably because of the value they would have in the future, and it was not a pleasant experience to buy plates with endangered species on them and to know that these animals, fowl, and fish have made this list because man has let them become a part of the endangered species or extinct. It is with sadness in my heart that I see fowl, fish or game ever make such a list. I think it is the responsibility of everyone here to see that as few of these as possible become endangered species or extinct.

"Human beings have contributed much to our planet, to our state, and to our way of life. We, too, have need of water and land, and we have to learn to share it. When we take everything for ourselves, we are poorer for what we have lost; when we share with other forms of life, we are richer for what we have saved.

"It has been a pleasure serving on this Commission, and if at any time I can be of help, I would certainly like to do so. Thank you." ●

Pointers on Playing

hooking a fish is important, naturally, but any experienced rod waver will tell you that the second order of business is the real test

By CHARLES WATERMAN

MY CRYSTAL BALL is a little misty about what energy shortages can do to fishing, but a lot of people have opinions. They vary from the horrified promise that we won't be able to use big, fast boats anymore, and therefore can't go fishing at all, to the appraising comment that there are too many fishermen anyway, so we need to get rid of part of them.

One thinking outdoorsman says what the whole outdoors needs is a depression. Then, he says, the people who really like to fish or hunt will manage to do it anyway and the occasional sportsmen who tend to crowd the waters and forests would stay home and save their fuel for something else. To paraphrase the cigaret advertising, he believes the outdoors isn't for everybody anyway; that if there's a way of culling out the ones who don't need it, we're ahead of the game.

But if there are less hunters and fishermen in days to come, there will be less incentive for manufacturers to produce the things that have made fishing so much easier than it used to be. The joys of owning good equipment are high on the priority list for most of us.

Perhaps the big, fast fishing boat is the outstanding example of luxury. Most of them burn a lot of fuel, and even if the individual can get his gas when he wants it, he might be in disfavor with people who are short of fuel for what they consider more essential purposes. Already there's considerable talk about the gas-guzzling motorboat, just as they talk about the gas-guzzling automobile. If rationing is used, chances are folks on the bank will figure what you do with your share is nobody's business. If there's no strict rationing—simply shortages—the jockey of a 50-mile-an-hour bass boat might be about as popular as a mouse in a cooky jar.

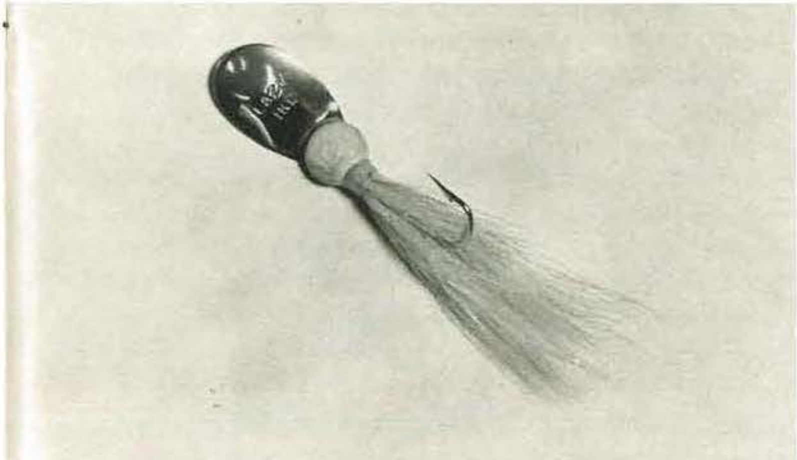
Now I feel that less boat traffic will undoubtedly improve fishing in some places. I would guess that some of the more remote fishing resorts will come upon hard times. I believe that instead of discontinuing their fishing, many anglers will pay new attention to fishing close to home. I believe there will be a trend to very light boats and canoes. I think there will be a preference for package tours where long-distance travel is contemplated. There may be less of the angler simply hooking up his trailer and breezing off across country without plan.

And to some small extent I must agree with the fellow who wanted a depression for benefit of the outdoors. I *do* feel that there are many fishing spots that have been overcrowded because they're at the end of scenic roads. I *do* feel that many fishermen are boaters first and anglers second, and I suspect that fuel shortages will send some of them back to the dock. Most of them wouldn't want to wade or row. For some years, oars have been hard to find around some boat docks.

As I've said before, an energy shortage has no precedent in this country. You cannot compare it to either World War II or the Great Depression except in very superficial fashion. During the depression nobody was blamed for taking fishing trips at his own expense, even though he might be envied. During the war it was difficult to feel kindly toward anyone who enjoyed sport in too plush a fashion while somebody else was making sacrifices. I'd guess that the energy crisis attitude is falling somewhere in between.

THERE'S A NEW BAIT called Wigly Jig Ike by Lazy Ike. It's a metal lip attached ahead of what appears to be an ordinary jig. It probably will be attractive,

(*Continued on next page*)



Wigly Jig Ike, at left, is a "lipped" jig which will perform with straight reeling.

(Continued from preceding page)

even when reeled steadily. A similar function has been performed by the Wiggle Jig, which tends to remain with the hook upright when the lure sinks clear to the bottom. It doesn't hang up readily.

Not many jigs have built-in wiggle, and in some kinds of fishing it's neither needed nor wanted. Most jigs that wiggle are best in shallower water because their design usually causes them to sink slowly.

The bean-shaped lead bodies of some jigs are formed to sink as rapidly as possible, the hook riding up as they go down and the narrow, blade-like surface offering little resistance to the water. Round jig heads go down fast, although they can be outdropped by the "beans" that go down edgewise.

BEGINNING FISHERMEN get some conflicting advice about playing fish. The new school of bass fishermen figures on playing the fish "after it's in the boat," most of them using pretty heavy tackle and keeping the fish coming once they head it in the right direction.

Down in the Keys where they catch big tarpon on fly, spinning, and plugging tackle, the experts really put the pressure to them. A 100-pound tarpon in 15 minutes on a fly rod isn't unusual at all.

"After the first half hour your chances are getting poorer," one guide says. He explains that the hook's hole is wearing larger all the time, that the line or leader is getting hard wear, and even that the fisherman is getting less efficient.

So much for the business of playing the fish hard. There's no doubt it has its place. But hard pressure doesn't always work. When hooks are very small or the fish's mouth papery, you'll need to take it easy. The shad is one customer who won't stand horsing. Shad fights are pretty long for the fish's size, even when the tackle is heavy enough to rush things. The shad's mouth will give way even as will that of a crappie. The crappie can generally be had with steady pressure—just enough to overcome his pull—but he has a papery mouth, and you should neither horse him in nor give him time to wear a big hook hole. How's that for vague advice? Similar admonition works for salt water trout.

Now soft rods help for fish that must be played gently. Atlantic salmon fishermen, who generally use fly rods, aren't noted for the kind of pressure that tarpon or snook fishermen employ, even when their fish are big.

Most of the Atlantic salmon fishermen I have watched have used the delicate touch in the extreme. It was usually a matter of following the fish downstream almost immediately. I doubt if the pressure on the leader averaged more than a pound.

There's no delicate touch here. A big Florida Keys tarpon hooked on a fly demands all of the pressure tackle can stand. It's a big hook and a tough jaw.

I approach my own experiences with some misgivings because I've caught very few Atlantic salmon. Anyway, I put a lot more pressure on them than most of the veterans do and seemed to get away with it pretty well. I did unbutton a grilse (young fish returning after only 1 year at sea) early in the game as I tried to slide him up on a gravel bar, but there were a couple of other fish that I played like bass or snook and got away with it.

The salmon isn't supposed to have a tough mouth. When it's possible to follow one downstream—along the bank, by wading, or with a canoe—there's no doubt about the careful way being the best. Nevertheless, they often run away with people who are too cautious.

Needless to say, it's the solid tug that tears out hooks, and the softer the rod the less chance there is of it happening, providing the rod isn't already bent to the extreme. There's a good illustration of that in the practice of lifting a bass or panfish over the gunwale with the rod tip. It's a very efficient method now that rods are tough enough to do it.

Let's make this a public apology to Grits Gresham, who once sent out a questionnaire while putting together his book on bass fishing. One of the questions involved the practice of lifting a fish aboard with the rod tip, and I scoffed at the very lowbrow idea, having come from the school that believes in the net or the lip grip. Then I began to use the method myself and found it worked on small fish.

The other day while fishing with Bob Budd (who was catching about five panfish to my one), I hooked a buster bluegill on a little spinner, reached down, and started to lift him aboard with my hand on the line. He flopped and was gone, whereupon Bob bawled me out for not lifting him aboard with the rod. With the spring of the tip he's not likely to get away, but when you have a solid grip on the line he gets a solid tug. That's well known when a fish is in the water, but some anglers haven't thought about it in connection with putting him over the side.

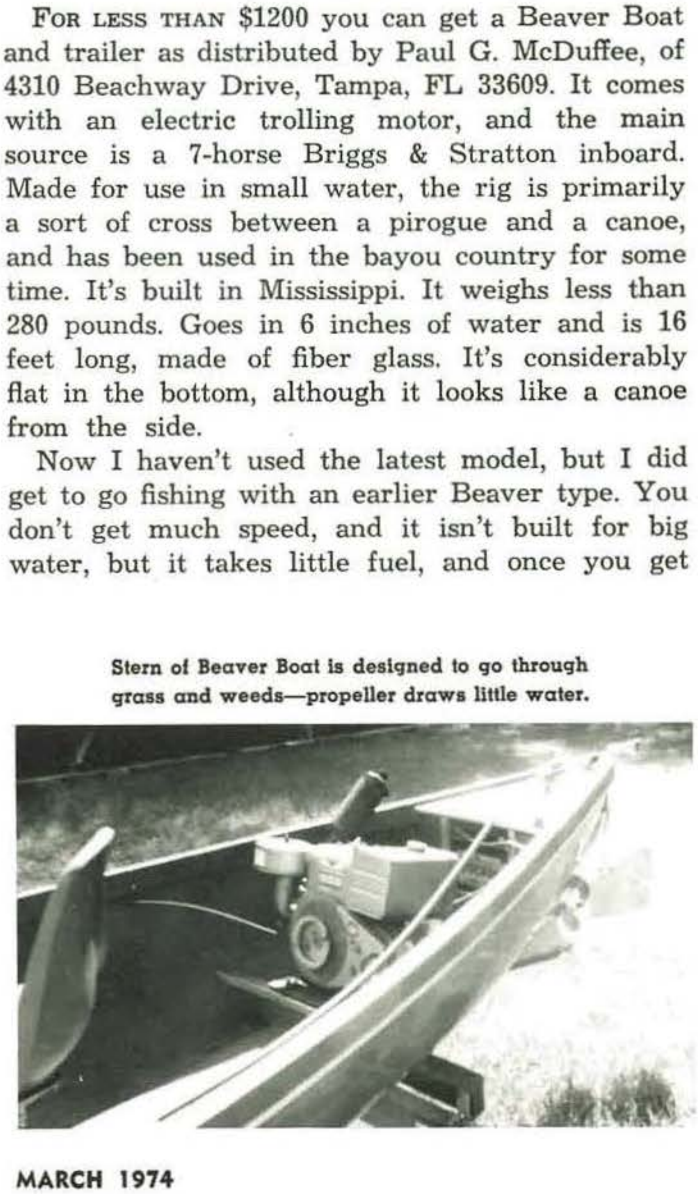
When the stiff worming rods came along some fishermen began to cast with both hands. By former standards the rods were too stiff for the lure weight, and it took extra power to make the tip flex. Now, two-handed worm casting has become pretty standard, especially when a turning-spool reel is used. Those who haven't tried it will find it requires hardly any practice.

You still guide the lure with your natural casting hand, just adding a little snap with the other fist. Nothing new in this, and we've discussed it here before, but there is one novel application: People who have some sort of problem with their casting arms, maybe tennis elbow or something, will find that they can still steer the cast with the ailing arm and apply nearly all of the power with the other one.

For less than $1200 you can get a Beaver Boat and trailer as distributed by Paul G. McDuffee, of 4310 Beachway Drive, Tampa, FL 33609. It comes with an electric trolling motor, and the main source is a 7-horse Briggs & Stratton inboard. Made for use in small water, the rig is primarily a sort of cross between a pirogue and a canoe, and has been used in the bayou country for some time. It's built in Mississippi. It weighs less than 280 pounds. Goes in 6 inches of water and is 16 feet long, made of fiber glass. It's considerably flat in the bottom, although it looks like a canoe from the side.

Now I haven't used the latest model, but I did get to go fishing with an earlier Beaver type. You don't get much speed, and it isn't built for big water, but it takes little fuel, and once you get to the fishing spot it works easily with oars or paddle as well as with an electric.

Stern of Beaver Boat is designed to go through grass and weeds—propeller draws little water.



There aren't many of those 4-cycle inboards on small skiffs anymore. Time was when they were the standby of salt water trout fishermen, and since much of that fishing was trolling, the vibrations of the various models was quite important, leading to "lucky" boats and the other kind. I ain't going to say what kind of putt-putt was the winner in popularity, but it was quickly proven that the little inboard hotheads would catch more fish than an outboard with underwater exhaust.

But the mullet and trout fishermen who grew up with those little motors went to the fast outboards, generally changing their fishing methods to fit their new rigs.

The Beaver Boat will go through a lot of vegetation. We may see more of its type if gas remains scarce.

Although it's often said that if a bluegill were bigger we'd be scared of him, it appears that the redbreast sunfish is a harder puller, ounce for ounce. It shows up frequently when you're catching both kinds in the same spot. The redbreast doesn't get very big, but he's a willing striker on a variety of lures. In the South, "bream" can mean several kinds of sunfish, although some insist that it refers only to bluegills. The redbreast is often listed as a bream.

The question of what is the fightingest salt water fish is a bearded old subject, but I've heard considerable support for the bluefish lately. The blue has been handicapped by heavy tackle in most cases, but when fast to something light, he is a holy terror. He hits hard, jumps and runs fast, and when you get him in the boat he'll still bite you on purpose and with malice. Maybe he *is* the champ.

Larry P. Kates, of Orlando, comes up with a letter about adding scent to fishing plugs for use on redfish (channel bass). Seems he fished with a man who used blue crab, pounded to a paste and then rubbed on the lure. In at least one case the taste and smell additive was the difference between fish and no fish. Without the goop they followed and wouldn't take.

If you have trouble catching blue crabs you might use some of the scent sold for the purpose but generally applied to bucktail or plastic worms rather than plugs. It begins to appear that fish are much more sensitive to traces of taste than we originally believed. Perhaps a little smear of something may last for a long while, even on a smooth plug.

If there's enough human scent from your hands to occasionally hurt fishing with plugs, it's a cinch there's enough scent from a squashed blue crab to attract attention. ●

Photo By Morrie Naggiar

this big, busy rodent is sometimes

annoying but always interesting

Beaver on the Suwannee

OVER TORTUOUS MOUNTAIN RANGES, across uncharted rivers and through dismal swamps and forests, the beaver trapper blazed trails which were followed by settlers, and built trading posts which were to become great cities. Settlement of the American West was greatly accelerated by the demand for beaver pelts; and thus the chisel-toothed woodcutters were nearly exploited to extinction. Through protective game laws, restocking programs and predator elimination, beavers have been given a new lease on life. However, the fickleness of the fashion industry, which turned to silk for use in hat-making, was primarily responsible for the salvation of the beaver's "hide."

As lumberjack, wood trucker and carpenter, he has no 4-footed equal. Other than man, beavers are the only mammals who endeavor to alter their environment, and are therefore presently occupying a position of considerable contention. They are usually maligned and harassed because of their dam-building practices, which cause roads to be flooded and farmland to be inundated; note is seldom made of benefits gained from their presence. Ponds, created by their dams, provide habitat for fish and waterfowl and water for cattle during dry seasons. Dams also slow the force of streams, and thus inhibit soil erosion.

Beavers once teemed wherever suitable habitat was available. Today, these prolific rodents are again prospering and increasing their numbers. Recent observations along Florida's Suwannee River indicate that nature's architectural engineer

The beaver attacks tree using razor-edged incisors, with results seen in photo at left. Where there's sufficiently deep water nearby, beavers live in bank burrows, seen above. Webbed hind feet, flat, scaly tail, and prominent front teeth are trademarks of the beaver, pictured below.

By VINARD HITT

is rapidly expanding its range. Offspring from restocked and remnant populations in Georgia have migrated southward and colonized portions of the Suwannee that haven't known beaver tracks in this century. Population density is greatest in the vicinity of Suwannee River State Park at Ellaville; however, they occur from the swamps of the upper Suwannee north of Lake City, downstream to Troy Springs, near Branford.

In large rivers such as the Suwannee, they inhabit burrows dug into the river banks from beneath the surface. In addition, they have built several dams and lodges in cypress ponds adjacent to the Suwannee near the Florida-Georgia boundary.

Dams, which may be several hundred feet long and 5 feet high, create the ponds in which the lodges are built. Extending several feet above the water, lodges are constructed of sticks and branches, chinked with mud. Passageways all lead downward from inside and exit underwater. Since he must dive beneath the pond's surface to reach the entrance to his fortress, the beaver is protected from bears, bobcats and other predators.

Entirely vegetarian, they subsist on the bark and wood of twigs, branches and tree trunks. Streamside evidence indicates that beavers along the Suwannee River eat sweet gum, willow, hickory, and pine; their northern cousins consume

(Continued on next page)

Photo By Leonard Lee Rue III

(*Continued from preceding page*)

quantities of poplar, birch, willow, aspen, and hazelnut. As nearby food supplies are diminished, logging trails and canals are built from the safety of the pond to nearby timber stands. These offer quick escape routes and allow logs to be easily dragged or floated along these pathways, back to the beaver's quarters.

Beavers do not hibernate, but anchor quantities of brush and branches to the bottom of their pond for food when winter ice covers their home waters. Even though ponds do not freeze over in the Southeast, the habit of storing underwater winter food supplies is common. Indians believed that the severity of the oncoming season could be predicted by observing the proportions of the beaver's cache.

The largest and most amphibious members of the native North American gnawing fraternity, they may reach a length of 4 feet and weigh 40 pounds. Ideally suited for aquatic life, they have webbed hind feet, a flat, scaly, hairless tail (used as a rudder while swimming and a brace while standing erect), and can submerge for 15 minutes. Their red-orange incisors (used by Indians as cutting tools) continue to grow throughout their lifetime and must be worn down by constant gnawing.

Standing on his hind legs and supporting himself with his tail, a beaver grasps a tree trunk with his forepaws and cuts a notch with his razor-edged teeth. Another notch is cut and the bark and wood between the two notches is wrenched away. He

Photo By Morrie Naggiar

Typical beaver dam of sticks and mud is seen in photo above. Impounded waters can often improve habitat for both wildlife and domestic stock. Where banks are low or otherwise unsuited for burrows, the beaver builds its lodge of branches and mud. Lodge has an inner chamber above water level, gotten to by underwater entrances. Beavers work hard to keep dams and lodges in repair. Beaver, right, swims with stick in mouth.

Photo By Wallace Hughes

continues to chip and twist away pieces, and, as the trunk snaps, he scurries to safety. Contrary to popular belief, beavers cannot topple trees in desired directions.

Beavers are monogamous and thus select a mate for life. Information on the reproductive habits of Florida beavers is minimal. According to Moore and Martin (1949), Alabama beavers breed from October through March and older females may bear two litters per year. Northern beavers mate in late winter and produce only one litter per year. Two to four kits are whelped in the spring and weigh about one pound at birth, attaining 15 to 25 pounds within the first year. A typical beaver lodge consists of two adults, several subadults, and the young of the year. Young beavers leave home during their second year, seek mates, and usually establish colonies elsewhere. Occasionally they return with their mates to their home pond.

Beavers are unprotected furbearers in Florida. There is no closed season within the state, except on Eglin Air Force Base in west Florida. A valid hunting license is required and steel traps may not be used. The use or possession of any steel trap is prohibited in any place where wildlife may be found. By definition, a steel trap is any mechanical device designed or used to take furbearing animals or other wildlife, by seizing and holding a part of the body. Beavers may be taken by means of live traps, snares or guns.

Since the fur of the Florida beaver is of poor quality, the probability of him becoming extinct is remote. Even though his presence may sometimes be annoying, and his activities may sometimes prove costly to tree farmers, let us be glad that the "paddle-tailed pulpwooder" did not succumb to man's thoughtless exploitation, as did the Carolina parakeet and the passenger pigeon.

Beaver flesh is edible, and many north Florida residents enjoy preparing and serving it. Here are two recipes, in case you want to try them.

ROAST BEAVER

Young beaver carcass
½ to ¾ lb. sliced bacon ends
6 carrots cut in 2" chunks and split in half
1½ cups chopped celery, leaves end
4 onions sliced ¼" thick
Lemon slices
2 cloves garlic
Thyme
Marjoram
Basil
3 or 4 small chilis
2 bay leaves
Salt, Pepper, Bouillon

A 10 to 12 pound dressed young beaver will fit whole in a Westinghouse roaster. For the larger carcasses, cut them into 4 or 6 pieces. Place on a rack to keep off the bottom of pan. Salt and pepper. Strip generously with sliced bacon ends. Place lemon slices over carcass. Add 2 quarts of bouillon. Add the vegetables, scattering them over and around the carcass. Slice the garlic very thin and scatter over carcass. Add the chilis and bay leaves. Cover. Cook until done—depending on the size and age. It takes from 2 to 3 hours or more. Add more bouillon if needed.

FRIED BEAVER

Use a small beaver cut into pieces. Remove fat and soak overnight in cold water. Drain. Cook in a small amount of water until tender, then fry with bacon and seasoning salt. Try some hickory-smoked seasoning salt on this. ●

Photo By Leonard Lee Rue III

try the midgets,
but be prepared—
anything can happen!

Minis to the Rescue

By MAX HUNN

IT WAS A GORGEOUS day to be outdoors. The type that can drive a bass fisherman wacky. Isolated, beautiful, fleecy clouds intermingled with huge patches of deep blue. Lurking in the gin clear depths of the woodland stream were plenty of fish. But they weren't hitting. It was as though they had lockjaw.

We'd tried top water plugs shortly after dawn when we started fishing Silver Glen Run not far from the eastern edge of the Ocala National Forest. We had also tried worms on the bottom, as well as too darned many other lures in between. Our score was double zero.

Charlie Keefer, fishing from the bow, remarked disgustedly, "The only fish that wants this worm is a bream. I can feel him nibbling, but he's a fool to think he can do business with a 9-inch worm."

He reared back anyway, in the forlorn hope that maybe, just maybe, the gentle tap might have been a bass. They sometimes fool you. But he wasn't fooled. He made no connection, and he reeled in a plastic worm with a hook that showed no signs of having made fish contact.

"I knew it!" he exclaimed. "Only fish that'll hit today are those pesky bream! We should have stood in bed."

It was readily apparent that our long planned fishing trip to Silver Glen Springs and Lake George was getting off to a very sorry start. We'd been planning to sample the angling in the area for months, ever since Justin Morgan, who manages Silver Glen Springs and Campground, had showed us some catch pictures. He had photographic evidence that the bass run big, but we certainly weren't going to be able to match his family's feats.

With a chuckle he'd told us that the biggest fish he'd caught was a 15-pound, 4-ounce bucketmouth, which he'd had mounted, naturally. It was a big fish. Then, he explained, his wife had caught a 17-pound, 9-ounce bronzeback, and added, "I didn't have it mounted."

He didn't seem to have any serious scars, so we could only assume that his wife hadn't objected too strenuously, or if she had, it had been verbally and not physically.

But we weren't even getting strikes, let alone having to worry about whether or not the fish were record size. It was truly a day to try a bass fisherman's soul.

I didn't bother to sympathize with Charlie, nor try to figure out why the fish weren't hitting. It was all too obvious they weren't. That was enough. Instead, I remarked, "I'm going to have some fun. If the bass won't hit, maybe the bream will."

We'd seen oodles of bream and small bass in the clear water bubbling from Silver Glen Springs. That was what made the situation so irritating, and the night before, a camper had landed several 2-pound bass in front of the campground, which isn't very far from the spring boil. Silver Glen is quite a spring, pouring out 72 million gallons every 24 hours. But plenty of crystal clear water was a handicap fishwise, as far as we were concerned.

"You're goin' to do what?" queried Charlie. "I didn't see you bring any worms along."

I chuckled and reached into my tackle box. I wasn't going to use worms, although it might have been a good idea. I was going to use mini-plugs. "Minis to the rescue" was my motto.

What Charlie didn't know was that I'd been in this fix too many times before, and had discovered that sometimes the only way to save a fishing trip and get some action is to resort to mini-plugs or tiny jigs.

For years I've kept a supply of miniature lures tucked away in both my fresh and salt water tackle boxes, just to save the day. I've successfully used plugs and jigs in fresh water, but in salt water, mainly tiny jigs.

These tiny plugs, measuring from 1½ to 2 inches, are miniatures of standard lures. Naturally, they will work only with light line—2- to 6-pound test—and you don't make long casts with the ultralight rods that match the lures.

Fortunately, I'd brought along a 6-pound test, open-faced spinning outfit, a bit heavy, but still usable.

Charlie glanced at me curiously when he saw me haul out the little box of plugs. Then he realized what I was going to do, remarking: "Aw, you're cheating." Then he added, "Those should be the ticket in this clear water, but I don't have any."

I didn't offer to lend him any of my plugs. There was no need. His heavier rods and lines simply wouldn't have been able to handle them. The minis require matching rods, as well as reels and line.

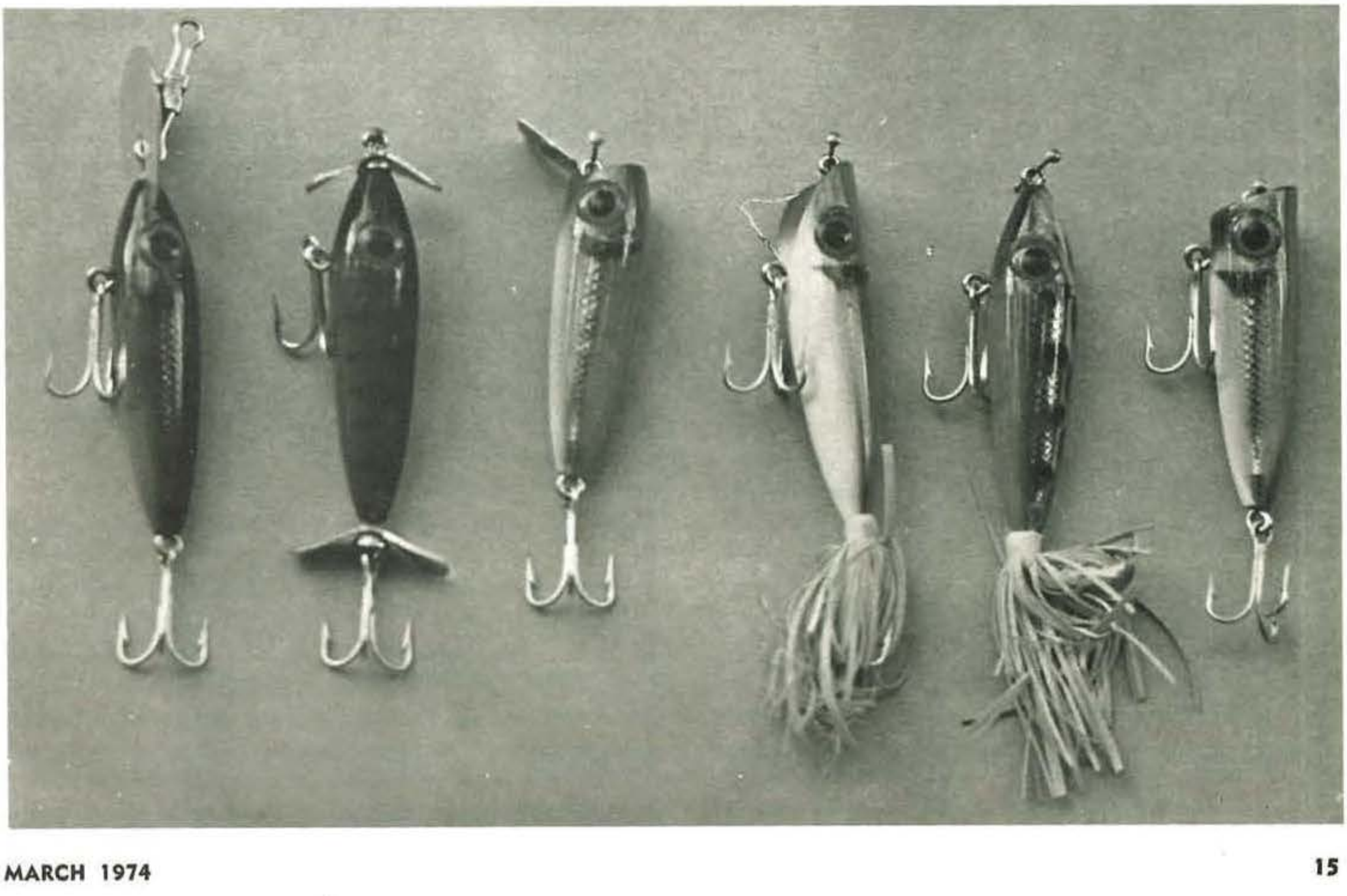
I tied on a tiny, double-propeller plug, and lobbed my first cast towards the shore, which looked like a good hideout for bream.

But nothing happened with the first cast, nor with the second and third. Charlie was beginning to give me that I-told-you-so look, although he didn't say anything. Maybe the minis weren't going to perform the rescue act.

(Continued on next page)

A mini-plug fooled the 4-pound largemouth at left after larger lures failed to produce. Mini-plugs, below, are duplicates of standard plugs, but they require 2- to 6-pound test line for easy casting.

Photos By Kit and Max Hunn



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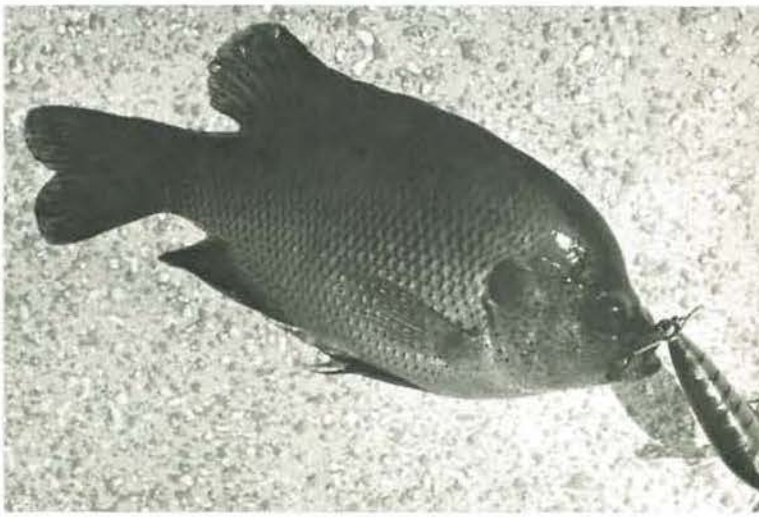
Then I got a cast in really tight, and bingo, I was in action. A little bream challenged the plug, and, feeling the tiny hooks, tried to duck back under the hyacinth cover. But he couldn't make it. After a short fight, which I played cautiously, (for the line wasn't heavy enough for any manhandling) I put this little scrapper in the boat.

"Minis to the rescue," I remarked, as I unhooked and released the little fighter. "Match your tackle to your fish and you can always have fun."

"Probably just a stray," remarked Charlie in typical fishing buddy fashion. Buddies somehow are prone to downgrade your achievements.

I eased us along with the electric motor, and, sighting another likely looking place, arched a looping cast near some cover. This bream tried hard, but he was either too small or he was cross-eyed. He failed to connect. Then I started to get the range. Within the next half hour, as we slowly worked our way up Silver Glen Run with the electric motor, I hooked, landed, and released six more bream. Seven fish in 30 minutes isn't bad when you're also handling the boat.

I had fun challenging the little scrappers, at the same time being darned careful not to overshoot with the little plugs. A successful cast had to be within 3 or 4 inches of cover, or no action. When I managed to flip the tiny propeller job into just the right spot, I got action. If I didn't, I was just practice casting.



Meanwhile, Charlie had to be content with feeling bream nibble his worm, or disconsolately reeling in top water plugs after unsuccessful casts. It was not a day for orthodox fishing. That was obvious.

Of course, I had been secretly hoping that maybe a bass would wander into the act. They do take

Photos By Kit and Max Hunn

Upper left, the author boats crappie from Lake Marion while fishing with Morrison Davis. This stumpknocker, lower left, put up a good scrap after hitting a mini-propeller plug at Silver Glen run. Mini-jigs, seen above, can prove to be the ticket when the fish are reluctant to hit larger attractors.

streaks when they want only small lures, no matter their size, as Kit and I had learned on a small pond on a South Carolina plantation.

We'd been invited to fish this private pond, which had been stocked and had the reputation for producing hefty bass. Dean Poucher, our host, who'd made the arrangements, had assured us that it would be "like spearing fish in a barrel."

He had us drooling in anticipation as he related stories about this particular plantation pond. We soon got out of the drooling mood, however. Conventional plugs and tackle produced nothing. Again it was a case of a bright day, no clouds, and clear water. We'd been fishing for three hours with nary a bump.

Fortunately I'd brought along an ultralight outfit with 4-pound test line. In desperation, I rigged the ultralight, hoping to at least get a bream.

But action remained nil, as I changed from one mini to another. Finally, I put on the sixth one, and remarked to Kit, "If this doesn't get something, we've had it. It'll be time to go."

I flipped the little plug near a stand of grass in the water and began a slow, tantalizing retrieve. Socko! I had a solid hit, and the light little rod bent like a palm in a hurricane.

This fish bulldogged off for the weeds, and I wondered if the rod pressure could stop him. It bent in a giant "U" as the tiny reel's drag squealed. Just short of the protective cover, the rod pressure caused the bass to change direction. Only this time he jumped, and my heart did too. He was far bigger than I'd estimated. He'd go at least 3—maybe 4—pounds, and here I was fighting him with 4-pound test line. I'd heard of the 10-to-one club (10 pounds of fish for every pound of line test), but I didn't want to join now. Even if this was one-to-one, it wasn't my idea of the proper tackle to handle this bronzeback. I wanted this bass in the boat!

Then, fortunately, he powered off for the center of the pond. The fishing gods were smiling. He sulked as I applied all the pressure possible, and then gradually, grudgingly, the bass started coming toward me. He struggled some more and then turned on his side. I landed him with the old lower jaw grip. I had no choice. We hadn't brought a net. Then I sat down to steady my nerves. The bass weighed 4 pounds. Mini-plug fishing with lunkers can be awfully hard on the heart. Whew!

In a similar manner, minis—only tiny jigs this time—have saved the day for me when crappie fishing on Santee-Cooper, South Carolina's famous impoundment. There, using 1/8-, 1/16-, and 1/32-ounce jigs is the sporting way to seek black and white crappie around the stumps in Lake Marion. The crappie range up to 5 pounds, and they fight against light tackle.

Pier fishing with Morrison Davis, manager of Goat Island, a famous fishing resort on the upper Santee-Cooper, I had a 4-pound carp latch on to a 1/16-ounce jig bounced off the bottom near a crappie brush pile. That was a battle royal too, but I finally wore him down and worked him back to the shore where I could beach him. You never know what will hit a mini-lure.

Actually, I'm a little gunshy with this ultralight tackle. Big fish are rough on the nerves, and send your blood pressure soaring. Kit and I were fishing the Ten Thousand Islands mangrove country near the little town of Everglades, in the southwest part of Florida one day, when a big redfish almost gave me a coronary.

Again, normal tackle hadn't produced, and I'd gone to 4-pound test and mini-jigs to tease ½- to 1-pound mangrove snappers into hitting. They were obliging, when a silly 6-pound red suddenly decided he wanted the little white ⅛-ounce nylon jig.

I whipped him, but only because he hit near shore, took off for the middle of the creek, and Kit succeeded in getting the anchor up so we could drift behind him on the outgoing tide. Twice he tried to duck under our aluminum boat, but I managed to hold him off before he could break the line. When you fool around with the minis, anything can happen.

I carry mini-lures regularly as a matter of insurance against the day when the fish won't hit regular size lures. It's insurance all right, but I also recommend keeping your life insurance in force. When a lunker hits a mini-plug, instead of the small fish you're expecting, it *is* hard on your heart! ●

will we heed the warning or delay until it is too late?

Death of Lake Apopka

WATER IN QUANTITY, whether pond, creek, lake, river, or ocean, has always held a fascination for man. But this water all over the world is becoming less desirable to use because of waste pouring into it from a man-changed environment. Abused beyond reason by careless, irresponsible treatment, many of these waters, where once man could resort for a restorative day of fishing, swimming, or just sitting in quiet contemplation, are fast losing their attraction.

Uncontrolled population growth and development—progress in the minds of those with the tunnel vision imposed by the dollar sign—is at the root of the evil. This "progress" by way of population, industrial growth, increased agricultural uses, development of river basins, recreational use of water, and exploitation of shore properties is causing the overenrichment of lakes. The accelerated process of enrichment (overfertilization) causes undesirable changes in plant and animal life, reduces the esthetic beauty and economic values of bodies of water, and destroys water resources. Enrichment of water, intentional or unintentional, is called eutrophication. It can be defined, simply, as the increase of nutritive substances, especially phosphorous and nitrogen, in lakes.

There is no denying that there are waters so devoid of mineral and organic nutrients—the building blocks of the life cycle—that some enrichment would be of great benefit. But it does not follow that if a little is good, a great deal is even better. Yet, many waters of the state now receive a constant flow of enriching materials at a rate much faster than can be accommodated by the desirable plants growing there. The by-product is algae. Algae are minute, one-celled plants that ride the waves of every waterway in America. They colonize stagnant sloughs of rivers and backwaters behind dams. Under a microscope the tiny plants appear innocent, but they can quickly cover a bay with scum, slime up a rocky shoreline, coat the bottom of a boat, or clog an entire lake. With life spans of only a few days, the obnoxious algae make lakes grow old before their time. To realize the potential, it should be understood that algae depend on the actions of man.

Many lakes in unpopulated areas, spared the effects of a constant inflow of large quantities of nutrients, continue on with imperceptible change over the ages. Some of these retain their basic characteristics even though 10,000 years or more have passed since their formation. Other lakes in the same area are approaching extinction due to overenrichment. Lake Apopka is such a lake.

Straddling the line between Lake and Orange counties, west of Orlando, Apopka covers about 30,600 acres, but before the era of the muck farms it covered over 50,000 acres. The additional area, on the lake's north side, was a shallow peat- and muck-covered marsh, flooded and dry as dictated by weather cycles. Now, this third of the original lake bottom is farmland two feet below the level of the lake.

Through 1946, the water of Lake Apopka was clear, with a heavy growth of pondweed and profuse mats of water hyacinth. Fishing was exceptionally good, and people came from all over the United States to fish and vacation. But to get a complete picture, we must go back a few more years.

Geologically speaking, Apopka is one of Florida's oldest lakes. Once, about 100,000 years ago, more or less, during what the earth scientists call the Sangaman Interglacial Stage of the Pleistocene Era, Lake Apopka was probably part of a bay on the vast sheet of water that covered much of present-day Florida.

During the early settlement of the area, the lake and its northern outlet, a natural waterway, served as a convenient travel route, linking this part of central Florida with the coastal trading center of Jacksonville via the Oklawaha and St. Johns rivers.

Although it was not immediately apparent, the downfall of Lake Apopka began in 1922, when domestic sewage effluent was allowed to flow into the lake. By 1924, fresh fruit preparation waste water, carrying nutrients—solid waste products, tar residue from coloring dyes, and sugar from damaged fruit—was also allowed to enter the lake. Citrus concentrate waste water was first discharged into the lake in 1948.

Thanks to "Sawgrass Jones," using a system of pilings and earthen dams, the original Apopka-Beauclair Canal was opened in 1948. In 1955, the U.S. Army Corps of Engineers and the Southwest Florida Water Management District deepened, widened, and constructed a new lock and spillway in the canal, making possible the maintenance of water levels in Lake Apopka.

A hurricane passed through Lake Apopka in September 1947, uprooting vast quantities of submerged aquatic vegetation. As this mass of material began to decay, nutrients that had been held by these plants were released. The immediate result was the first heavy algae "bloom" on record for this lake. Water hyacinths also received a shot in the arm by the released nutrients, and increased rapidly.

In 1952, Florida Game and Fresh Water Fish Commission crews started hyacinth control efforts on the lake. They were later joined by spray crews

(Continued on next page)

By JOE CRUMPTON

It has taken 50 years of misuse to all but destroy the rich natural heritage of the Apopka chain. Under ever-increasing load of enriching wastes, seen left and below, its days are numbered unless corrective measures are taken immediately.

Photos By Joe Crumpton

Photo By Joe Crumpton

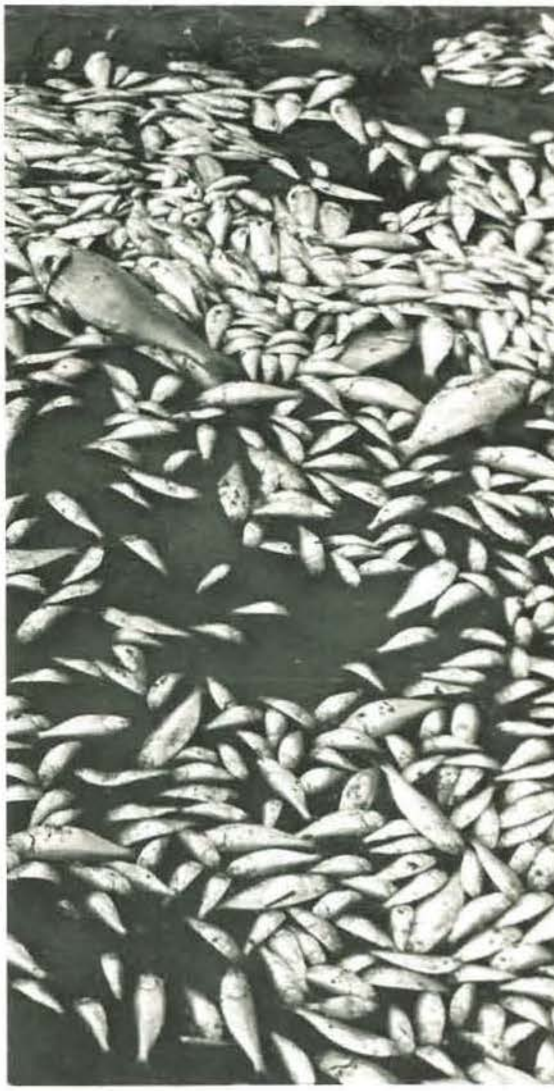


Photo By Gene Smith

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of the Corps of Engineers and from both Lake and Orange counties. By the late 1950s, Lake Apopka was supporting a pea soup-looking algae bloom. Oxygen deficiencies and resultant fish kills became frequent.

It was a vicious cycle, for hyacinths killed by spraying released nutrients that encouraged the even more rapid growth of surviving plants, of which there seemed to be a never-ending supply.

By 1962, fish kills were almost commonplace. They were the result of the general deterioration of the habitat, linked with leaching of fertilizers from farms and groves, and wastes from sewage plants and citrus processing, which brought on heavy algal blooms. When a die-off of algae occurred, oxygen deficiencies resulted, and thousands of fish died. The unrestricted use of pesticides in the lake drainage area also contributed to the general destruction. In 1963, area muck farmers spent more than a million dollars on spray materials, which gives some indication of the size of this phase of the problem.

During May and June 1963, there was a fish kill that accounted for an estimated 3 million pounds of shad. The major concern was not the loss of the shad but the horribly deteriorated condition of the habitat that brought about the kill.

In 1965, heavy rainfall occurred, and nutrients and accumulated algae were flushed out through the Apopka-Beauclair Canal, resulting in an increase in the clarity of the water. For a time, the important submerged and emergent aquatic plants took an upsurge, but it was a case of too little, too late.

The year 1965 marked the end of the commercial catfish industry on Apopka, and the doom of its once-renowned sport fishery. The U. S. Public Health Service, in cooperation with the U. S. Fish and Wildlife Service, reported that concentrations of DDT in largemouth bass from Apopka exceeded 160 parts per million, way above the level considered safe for human consumption.

A drawdown of the water level in the lake has been considered as an aid in at least staving off the complete loss of Lake Apopka as an economic and recreational resource. A large-scale project on Lake Tohopekaliga, not too far to the south, demonstrated the feasibility of the drawdown tech-

Water hyacinths, far left, thrive in the highly enriched lake. During past 12 years, fish kills, shown left, have become commonplace in the badly deteriorated habitat. Shown above is one of the 17 sewage treatment plants from which water comes into the Apopka system. Knowing abuse it has taken, it's small wonder the once clean waters, below, no longer have eye appeal.

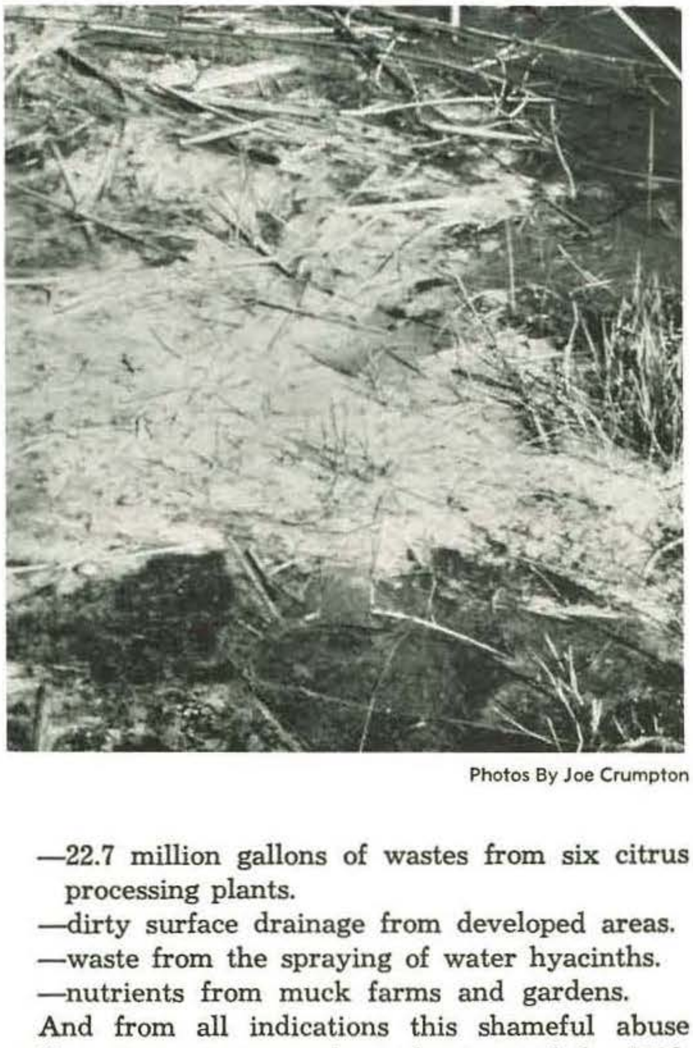
nique. Much nutrient-rich matter would be flushed from the lake as the water level was pulled down. This, coupled with the oxidation of accumulated debris by exposure of bottom areas to sun and air, would greatly reduce the overenrichment problem and help restore some semblance of reasonable water quality.

In January 1971, in an attempt to study problems related to the proposed drawdown of Apopka, a partial lowering of the water level was started. Concurrently, dead and dying alligators, turtles, snakes, and water birds, as well as fish, were observed. By the end of June, a team of scientists from the University of Georgia and Auburn University, working with Florida Game and Fresh Water Fish Commission personnel, had isolated the causative bacteria, *Aeromonas liquifaciens.* The nutrient broth that Lake Apopka had become apparently favored the runaway growth of this destructive organism.

Although it is not yet completely lost, certainly once-sparkling Lake Apopka is entering its final death throes. Small wonder, for, pushing it ever closer to the brink of oblivion in an absurd display of willful neglect, the people of the area allow to be discharged daily into the waters of the Apopka chain:

—261 million gallons of agricultural drainage from 43 pumping stations.

—3.5 million gallons of domestic waste water from 17 sewage treatment plants.



Photos By Joe Crumpton

—22.7 million gallons of wastes from six citrus processing plants.

—dirty surface drainage from developed areas.

—waste from the spraying of water hyacinths.

—nutrients from muck farms and gardens.

And from all indications this shameful abuse will continue at an accelerated rate until, by 1990, the discharge is expected to be double the current rate.

One therefore wonders: First the fish, then the alligators, snakes, turtles, and birds. Will we be the next to go? ●

Photo By Gene Smith

armed as he is, it pays to

Beware the Catfish

By SABINE EHLERS

IT WAS A SPARKLING, sunshiny Sunday afternoon, a perfect day for a family outing and some fishing. So thought Dr. I. Barnett Harrison, a well-known Tallahassee physician, as he took his family and some of his children's friends to Alligator Point, on the west coast of Florida.

All went according to schedule. The boat was launched. The children were happy. The fish were really biting, and they pulled in many, including some nice Spanish mackerel. Then they hooked a large saltwater catfish 3 feet long and weighing about 5 pounds—a typical north Florida Gafftopsail (*Bagre marinus*).

They decided it was too big to throw back, and besides, it might be interesting to see if it was edible, as some claim. They pulled it into the boat and placed it in a bucket. Later, on shore, they transferred it to a large plastic bag. As Dr. Harrison was carrying it to the car, one of its long pectoral fins, sticking through the plastic bag, pierced his kneecap, eventually causing a secondary infection which has required surgery and resulted in months of pain and misery. He isn't well yet.

"I've learned a lot about sea cats since," said Dr. Harrison. "People should know that catfish can be bad news, especially those caught in salt water. Not only do they secrete a venom that can cause severe reactions, like nausea, faintness, swelling, and pain, but their sting is often responsible for secondary infections like mine."

It was as though a syringe full of pseudamonas bacteria had been injected into his knee, later settling in the bone between the knee and ankle, he explained. There being no drainage, the infection became localized, and Dr. Harrison developed osteomyelitis, an inflammatory disease of the bone.

Not all fishermen who catch fresh and salt water catfishes are so unlucky, but if stung, most have the classic symptoms associated with the sting as described by Dr. Harrison.

The sting of most fresh water cats is less venomous than that of the salt water species. The sensation is much like a severe bee sting. The pain may disappear in a few hours, but the wound may continue to hurt for days.

But sea catfish are a different story. For example, the tropical species are so dangerous that a victim may lose consciousness, exhibit a weak pulse or low blood pressure, or have difficulty in breathing. It all depends on the species of catfish and the amount of venom received.

There is also the danger that one may be allergic to the venom of any species, be it fresh or salt water. An official of the Allergy Foundation of America, in New York City, claims that there isn't a single known substance that someone is not allergic to. If allergy enters the picture, the symptoms from even a relatively mild injection may be serious.

The greatest danger from stings of Florida catfish lies in secondary infections such as Dr. Harrison picked up from bacteria adhering to the spines of the fish. All catfish wounds should be treated; none should be considered minor.

Although the usual symptoms may not become serious, they aren't much fun either. For example, Dr. Henry Hoge, a professor at Florida State University, caught a catfish while fishing from his boat in the Gulf. In attempting to take it off the hook to release it, the fish's dorsal spine went through the middle of his hand. He felt nauseous and lightheaded. His hand became severely swollen, and after the swelling went down a painful knot remained in the center of his palm for days.

Another man's encounter with a salt water catfish left an open wound that didn't heal for a month, and still another fisherman reported a sting in his thigh that gave him trouble for months.

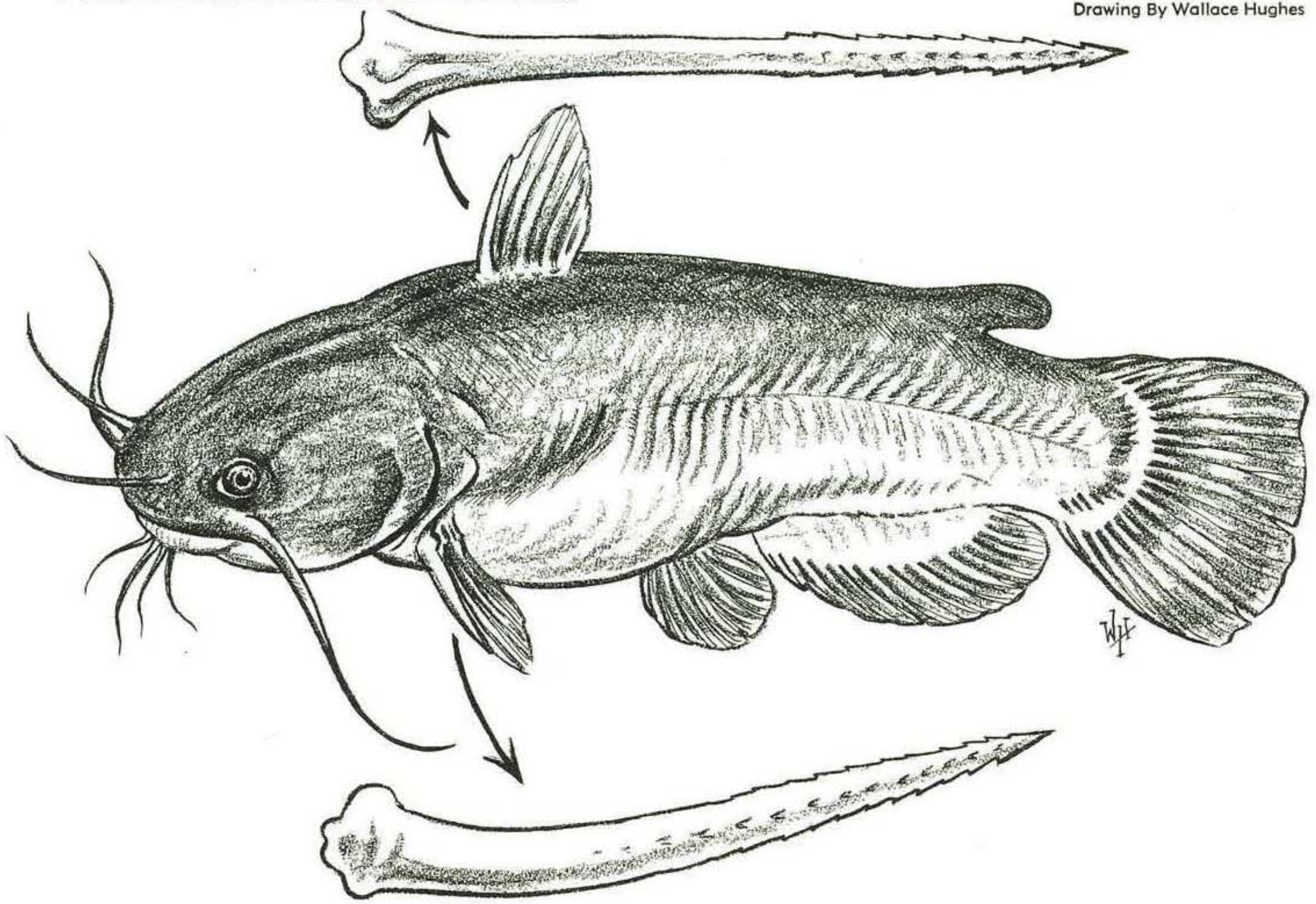
Captain Leon Langston, of Carrabelle, Florida, a retired sea captain who has taken fishing parties out into the Gulf on more than 3,000 trips, agrees that "Most people know little about the dangers of catfish. If they knew as much as they should, they'd be more careful. One man in a fishing party got stung in a vein, and we had to get back to the shore in a hurry," he said.

That Captain Langston is careful is borne out by Mrs. James E. Bachemin, of Tallahassee, who went on one of his fishing trips. Someone in the party pulled in a large catfish, and the crew made all the guests stand far back while they removed the "cat" from the hook and threw it overboard. "I really thought it rather unnecessary," Mrs.

(*Continued on next page*)

Fishing for channel catfish, seen left, offers fun and good eating, but the penalty for careless handling can be painful. The catfish's potent weapons, illustrated below, are paired pectoral spines and a dorsal spine—all of which are barbed and equipped with venom glands.

Drawing By Wallace Hughes



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Bachemin explained, "until I heard about Dr. Harrison's accident, and then I understood why." And so it goes. Nearly all fishermen have a tale to tell about their own experience, or that of a friend, with the tricky catfish.

Although there are 28 known species of catfish in the United States, "there are thousands around the world; 1,100 species in South America alone," says Dr. Ralph W. Yerger, an ichthyologist and professor of biological sciences at Florida State University.

In Florida, however, there are two well-known families. Family *Ariidae,* in which there are two salt water species, the Sea Catfish (*Galeichthys felis*) and the Gafftopsail (*Bagre marinus*).

The fresh water species belong to the Family *Ictaluridae.* Among the many Florida species are the tasty Channel Catfish (*Ictalurus punctatus*), the White Catfish (*Ictalurus catus*) and various bullheads, such as the Yellow Bullhead (*Ictalurus natalis*) and the Brown Bullhead (*Ictalurus nebulosus*).

In addition, the non-native walking catfish, from Asia, and the South American armored catfish are found in Florida.

In most catfishes the venom apparatus includes one dorsal and two pectoral spines, and the axillary glands, which are not evident externally.

Each stinger includes the bony spine and its sheath—a thin layer of sparsely pigmented skin which contains the venom glands. The spine is a thick, slender, tapered weapon having a sharp tip shaped like an arrow. A series of sharp, backward-turned teeth along its anterior and posterior surfaces make the spine even more dangerous.

Smile of success, right, can quickly turn to grimace of pain if a careless move jabs one of those sharp spines home. Besides the pain of venom, infection is a danger.

When the fish is handled, taken from a net, or while the hook is being taken out of its mouth, the dorsal and pectoral spines are firmly locked into a rigid, extended position, and make formidable weapons indeed. The thrust of a spine, with its lacerating teeth, into the flesh damages the delicate skin covering the spine, exposing the venom glands which discharge their toxic secretions into the wound.

In many parts of the world much has been written about the venom in catfishes. Articles in English, Spanish, French, and German have appeared in literature; some as early as the 1700s.

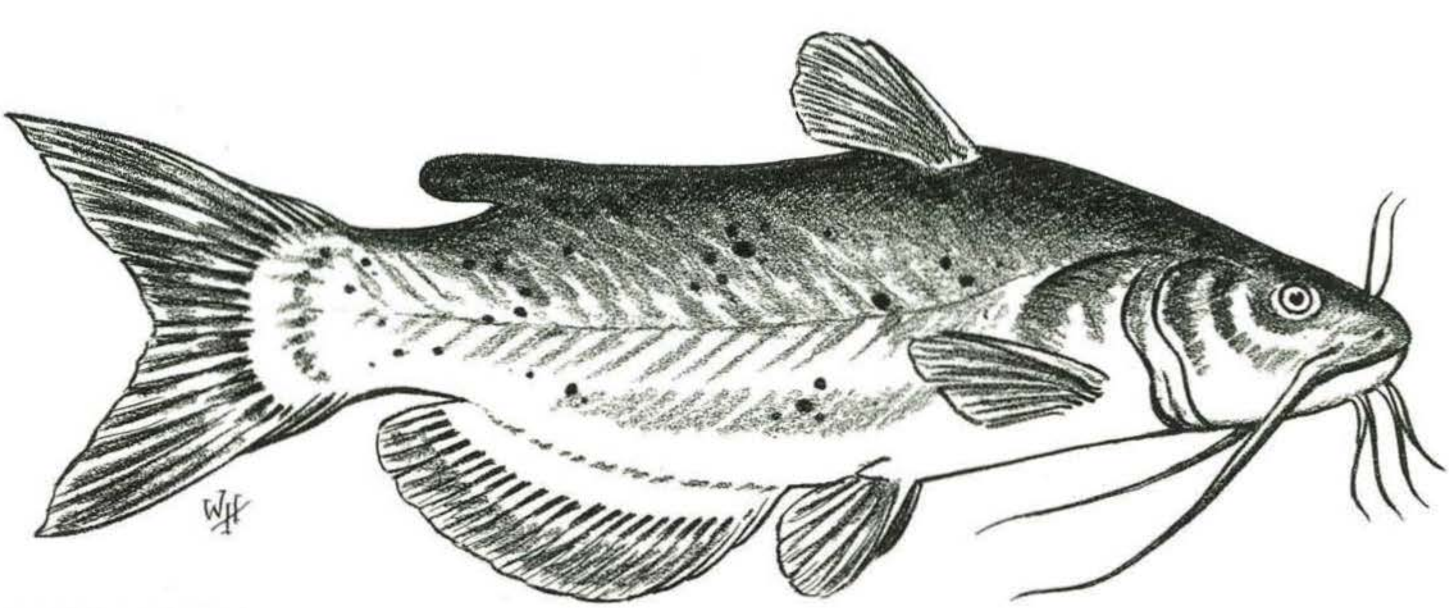
Johann G. O. Richter wrote in 1754, "Seagoing catfish were greatly feared by Spanish fishermen, and were reputed to be very venomous, and could cause loss of limb and even death."

Another tale (which can't be substantiated and may be apocryphal) is about a certain tribe of Indians who used to distill the venom from the glands of sea catfish and tip their arrows with the poison.

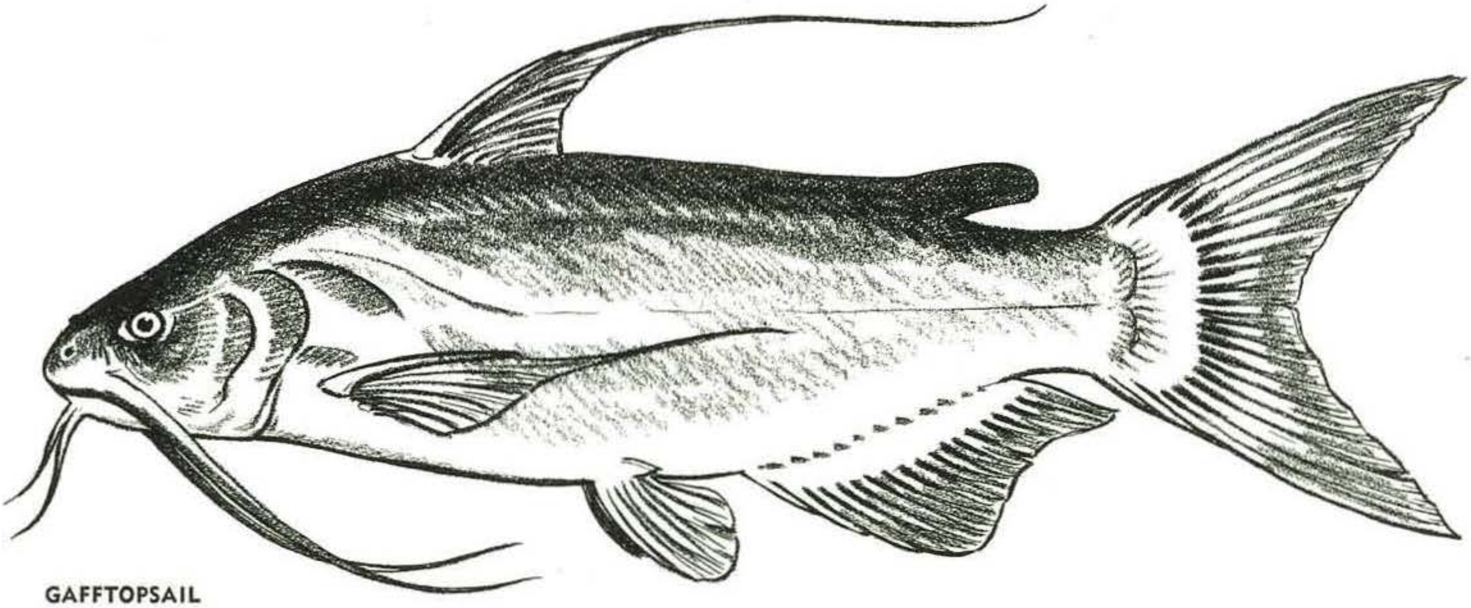
What is known about the venom? "Not much," says Dr. Harrison. "We do not known its chemical identity, nor how it reacts in tissue. We only know a few things that can be used to neutralize it."

Why don't we know more about the venom, since it has been a problem described in articles for centuries? Dr. Yerger believes that the answer is simple—lack of funds for its study. Like so much that needs study to help mankind, it seems there is always a lack of funds.

Despite the fact that catfishes are potentially dangerous, fresh water catfish are good to eat, and people who consider them a delicacy will continue to catch them.



CHANNEL CATFISH



GAFFTOPSAIL

Drawings By Wallace Hughes

Photo By Gene Smith

In the United States the commercial catfish industry is flourishing, with literally millions of catfish being caught each year. Hundreds of thousands of acres of farm ponds in 34 states are given over to growing fish. Supermarkets and restaurants are the major buyers.

The trick, then, is for the sport fisherman who wants to catch catfish to learn that these fish are dangerous, and how to handle them without getting hurt—keeping in mind that the spines of a dead catfish can cause as painful a sting and secondary infection as those of a live one.

If one is not interested in the catfish as food, the best solution is to cut the line and let the fish go, or pull the hook out in such a way as to prevent injury.

Buying or making a "catfish flipper" is one way to save the hook and line without even touching the fish. Harris Goldstein, an experienced fisherman, uses the flipper on fresh water catfish. It is an iron rod ¼ of an inch in diameter. On one end of the rod is a wooden handle. The other end is bent into a "U" shape about 1 inch across the "U."

"To flip the catfish free," he explains, "hold the line above the catfish with the left hand, if you are right-handed, and the flipper in the right hand so the line with the catfish attached is inside the "U." Slide the flipper down until it touches the catfish's mouth, then slowly pull the two hands apart horizontally so the line in the left hand is tight. With a circular motion of both arms, rotate the flipper, line, and catfish away from you. If this is done sharply, the catfish will slip off the hook.

Another way is used by Richard Husband, well known in Tallahassee for his work with the United States Power Squadron, and as a fisherman. He claims to have caught hundreds of sea catfish and to have retrieved the hook and line without being stung. His advice can apply to the fresh water species as well. "I always approach the fish from the tail to the head, placing my fingers at the base of the pectoral and dorsal fins to hold the fish rigidly so it is unable to move. Then I take a pair of longnose pliers, which I always carry in my boat, and pull the hook out and let the fish go."

But Dr. Harrison says, "My advice to inexperienced fishermen is simply this: Don't fool with them. Cut the line and let them go." ●

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IN MEMORIAM

By H. E. Wallace, Assistant Director
Florida Game & Fresh Water Fish Commission

FRANK WINSTON, veteran wildlife biologist of the Florida Game and Fresh Water Fish Commission, passed away of a massive heart attack on February 11, 1974.

I had the privilege of being with Frank on his last day. Gordon Spratt, assistant chief of Game Management Division, and I had met him at Gordon's 40 acres in central Florida on a brilliant sunny afternoon with plans to spend the night in the house trailer and to inspect the Green Swamp Wildlife Management Area the following day.

With a few hours to spare before dark, we toured the property in a leisurely manner. We observed hermit thrushes scratching in the leaves, listened to scolding titmice in the scrub, watched a fox squirrel climb a large live oak, and appreciated the bluebirds overhead. We poked around an armadillo hole, and visited a buttonbush bog that Gordon intends to develop into a duck pond. Frank and I chided Gordon as he proudly mounted an ancient tractor he has renovated. "Green Acres, here we come!" we shouted as he chugged around the pasture.

As the sun poked its head in the trees, we retired to the trailer, fired up the grill, and relaxed in good fellowship. Gordon had just removed the potatoes and was preparing to grill the steaks when it happened. Frank left us suddenly and painlessly.

Frank was born in East Chicago, Indiana, on April 3, 1919 of Lithuanian parents who spoke no English. He grew up in humble surroundings, and after graduating from high school he worked in a steel mill. He got his chance when, returning from service in the Army, he took advantage of the GI Bill and went to college, first at DePauw and then at Purdue University. While at Purdue he met Sue Enders, the daughter of the dean of the School of Science, and married her shortly before his graduation, in forestry, in January 1949.

At that time the Southeastern Cooperative Dove Study was just getting started, and a number of southern states were searching for project biologists. Frank was approached by several states, and I think he chose Florida because of its reputation for good fishing. At any rate, he joined the Game and Fresh Water Fish Commission in May 1949, and it didn't take long for his ability to be recognized. He became chief spokesman for the dove study, and what an outspoken spokesman he was! Many a public confrontation he had with the boys from the U.S. Fish and Wildlife Service. He could debate perceptively and convincingly with the "feds," and a stranger to the scene would be aghast at the fiery exchanges that emanated from those meetings. Yet, after such heated discussions Frank would join the ranks of the "enemy" for a social hour, and I know that many feds counted him among their dearest friends. He was highly admired and deeply respected.

When the main thrust of the dove program had been completed, Frank became leader of Florida's wildlife management area development program, assuming overall supervision of 40 management areas comprising 4 million acres of wildlife habitat. He was serving in this capacity when he left us.

Frank was a fixture at the annual Southeastern Wildlife Conferences. In 1954 he won the Southeastern Section of The Wildlife Society's award for his publication "Status, Movement, and Management of the Mourning Dove in Florida," Technical Bulletin No. 2, Florida Game and Fresh Water Fish Commission.

Frank was a fun-loving person and the life of the party. Many are the memories he left behind. As the years go by, his name and his antics will be recalled around many a campfire and in many a smoke-filled room.

During the annual banquet at the Southeastern meeting in Charleston several years ago, one of the favorite hosts was being recognized on the platform amidst a cheering standing ovation. Not being content to merely stand and cheer, Frank leaped to the tabletop in search of a better vantage point, and in the process he inadvertently planted his right foot squarely in the cherry pie of his unfortunate neighboring diner. Shaking the pie from his foot, he led the next cheer.

No, Frank will not be forgotten, and no, he didn't die an untimely death. He died in the woods he loved, with friends of long standing, a steak ready for the grill, and with a beer in his hand.

Were I to ask a gathering of wildlifers who was Frank's best friend, I'm sure 50 people would step forward to claim the honor. Frank was that kind of person. ●

Diagnosing Malfunctions

when a firearm fails to operate, the cause is usually not hard to nail down—and quite often the problem can be solved on the spot

By EDMUND McLAURIN

Quite often I am handed a firearm with the accompanying statement, "I wish you would tell me what's wrong with this gun!"

A recent typical case was a shotgun that frequently failed to close and lock its breechblock on chambered shells.

Close inspection failed to show a bent extractor or burr on the edge of the extractor cut. Simply, the extractor cut was hard-packed with greasy dirt! An old dental pick in my car kit of tools remedied the mechanical trouble within seconds.

Many owner-described "broken" firearms are not broken at all, but are in dire need of at least partial disassembly, thorough cleaning with mineral spirits and brush, and smooth polishing of rough parts.

The number one cause of malfunctioning of an autoloading rifle or shotgun is accumulated dirt and gummy grease. Even tiny particles of dirt can cause an autoloader to jam. Gritty grease is almost a sure stopper. Any firearm will benefit and perform more reliably if given periodic cleaning. At least partially disassemble and give parts a thorough mineral spirits washing, helped by an old toothbrush. Use a toothpick or an old dental pick to get accumulated dirt and grease out of small crevices. Finish up with rinsing of parts in clean mineral spirits. Air dry or quickly blow parts perfectly dry by a few seconds use of an auto service station's air hose.

Because oil and grease tend to collect particles of dirt, it is recommended that working parts be given a dry type of lubrication, like application of Rice's XF-15 graphite solution that sprays on and quickly dries to a durable oil-less film.

Autoloading shotguns made on the original Browning patent long-recoil system are subject to their own special malfunctions. Included in the group are the humpback receiver Brownings, Remington Model 11 and "Sportsman" models, Savage Model 720, and the Franchi semiautomatic, as well as other brands and models of similar internal functioning.

Operational failure of these models—especially positive extraction of fired shells—can invariably be traced to improper owner assembly of braking system component parts on magazine extension tubes. Order of assembly must match the recoil factor of light or heavy shell loads. If the brake system's components are assembled for use with heavy (express) shell loads, and light (field) loads are used, the gun will likely fail to eject a fired shell and will not completely feed a fresh shell into the firing chamber.

Conversely, when an autoloading shotgun of Browning long-recoil system punishes the shooter's shoulder just about every time he fires, chances are the friction brake's component parts are not properly assembled for the shell load being used. Where the brake system assembly is for light loads, and heavy loads are fired instead, the gun's breechblock will slam back hard against the receiver backplate and contribute to the recoil the shooter feels.

Ordinarily, for *heavy* shell loads, owners of humpback receiver Browning, Remington Model 11, and Remington "Sportsman" shotguns, after gun takedown and cleaning, should reassemble the recoil component parts in the following order: First, slip the long spiral recoil spring on clean, unlubricated extension tube; follow with the solid washerlike friction ring, its beveled edge up, or forward, (facing the gun's muzzle end); finally, slip on the wide, split-collar friction piece (actually a split-band spring). This last component must definitely not have any rough spots, or bind itself on the extension tube.

For *light* loads, the friction ring is placed next to the receiver, beveled edge down (facing the receiver) with the long spiral spring on top of it. The split-collar friction piece again takes position at the other end of the spiral spring. Again, parts must be clean, smooth and unlubricated.

For a Savage Model 720, assemble components in accordance with manufacturer directions, or get a gunsmith to do it for you. The Savage Model 720 has its own related order assembly.

Post purchase installation of a combination selective choke device and recoil compensator, such as a Lyman-Cutts or super ventilated Poly Choke, can upset the delicate functional balance of an otherwise practical, long-recoil autoloading mechanism. A weaker recoil spring must be ordered and installed where a compensator is added after gun purchase. Also, the gun's braking system components should be assembled in the special order recommended by the manufacturer

(Continued on next page)

(*Continued from preceding page*)

of the particular make and model of compensator used.

Keep in mind that a spring varies in tension as it ages. It is recommended that the long spiral spring of the original Browning patent braking system be replaced every 4,000 shots.

Tightening up a hunting gun here and there is also often called for, especially where a gun sees much active service. Usually, not much gunsmithing is entailed. For example, some months ago a friend and I were practice shooting at clay pigeons thrown from a handtrap, when I chanced to pick up and examine an empty shotshell case ejected from his Winchester Model 12 pump. The shell showed a clearly visible crack along its brass base, and a slight separation of the case head. Other empties picked up and examined had the same characteristics. I informed my friend that evidently his shotgun had excessive headspace—which he suddenly admitted, with dawning enlightenment, might be the cause of puzzling powder gas leakage he had been getting on firing!

Fortunately, in the case of the Winchester Model 12, excessive headspace can be easily corrected by the shooter himself. In designing the Model 12, Winchester included a simple adjustable sleeve lock that can be turned one or two notches counterclockwise until barrel and receiver assembly are again factory tight and there is no longer excessive headspace.

I was able to make the adjustment in a matter of minutes. Shells chambered and fired no longer split the brass base. An owner of a Winchester Model 12 should keep this simple gunsmithing step in mind, and take remedial action if his shotgun gives indications of having developed excessive headspace.

Most lever-actions tend to be springy in mechanism lockup. In time, excessive headspace can develop and cause misfiring, sometimes within the first 200 shots fired from a new rifle. Misfiring occurs when excessive headspace permits a loaded cartridge to be driven a bit forward by the force of the action's hammer blow, yet without the firing pin sufficiently indenting the cartridge primer for firing.

It is always a good idea to check an often used lever-action rifle at intervals to make sure it has not gradually developed excessive headspace, whether one fires close to maximum "hot" reloads or sticks to commercial ammunition.

A special headspace gauge is required. Headspace check can easily be made by a gunsmith, who quite likely already has the needed gauge.

How long has it been since your favorite hunting or target gun last received thorough cleaning and mechanical overhaul? Chances are good—if you are an average Joe—that the attention is long overdue.

ANY FORM OF SHOTGUN PRACTICE that involves fast-moving targets and requires correctly applied aim and gun swing, is basically helpful to an upland gunner. Included are trap and skeet shooting. These two sports have special appeal to shooters who enjoy seeing clay pigeon targets break from good hits.

Every year, more and more first-time participants fire on American trap and skeet ranges. Most, however, soon realize that to win in serious open competition, almost perfect scores are needed. Those who stay with their chosen shooting sport—and, creditably, many do—henceforth strive for perfection in performance. But with due respect to the legions of readers who are serious formal trap and skeet shooters, I feel that these two forms of shooting sport contribute limitedly to practical hitting of upland game.

I discount formal trap shooting as highly beneficial upland gunning practice simply because the trapshooter shoulders his gun, carefully snuggles his face down against the gunstock comb, and gets "all set" even before he sees something to shoot at. Further, the trapshooter knows that when he calls for his targets they will appear within a second of command, and—whether he is on firing station one or five—released targets will take paths within a known maximum trajectory height and likewise be within a zone of limited angle and known maximum distance flight. In contrast, the same shooter will face radically different target flight situations and time sequences when hunting upland game. His shots will not be limited to a relatively few already known or soon learned variables, as is common to trapshooting.

'Tis true that skeet shooting offers greater challenge of hitting moving targets from varying shooting angles around and at center of a half-circle. But target flight paths from opposite "high" and "low" target-release houses are constant, and with firsthand observance and range shooting experience, fairly predictable.

Also, American skeet, as we generally shoot skeet today, is markedly different from the early days and original intent of providing practice shooting at targets simulating game birds in flight.

In the sport's first days, a skeet shooter merely loaded his shotgun when on station, called "Pull!" and fired at released targets, much as he would do afield. His participation objective was to sharpen his upland gunning eye and coordinated gun handling, in helpful preparation for hunting to come.

Today, for most shooters of American skeet, a high score is the primary objective of participation. At each shooting station, serious shooters consciously and deliberately seek exact placement of feet (even to critical fraction of an inch!), then execute trial shouldering and pointing of shotgun and gun swing practice, before calling for a target of expected instantaneous release. Great care is taken to do the same thing in the same way at each respective shooting station throughout each round (25 shots) of skeet.

That's the way to shoot high skeet scores, but not the way to get the most beneficial practice for field shooting. I base this statement on observation of the upland gunning performances of a number of acknowledged expert trap and skeet shots. They perform with deadly consistency on gun club range layouts, with controlled flight targets, but seemingly are vulnerable to the unexpected developments and varied gun handling demanded for reliably hitting live targets in free flight. They miss birds—and I am not referring solely to missing doves. (*Everyone* misses a good portion of shots taken at doves, especially when the birds exert themselves in flight. Three dove kills for every seven shotshells expended is the common score among dove hunters.)

It is my belief that much of the missing that expert trap and skeet shots experience when hunting upland game is influenced by visual differences in shooting range perspective, as well as totally unpredictable behavior, flight angle, and path taken by a live target making a fast getaway.

Simply, most are used to firing over unobstructed range layouts. In hunting, brush and uneven terrain, or the presence of water holes, tend to add deception to accurate range estimation. There is also frequent misjudging of the "lead" required to hit a distant moving object seen against a fast-changing background.

A few practice sessions on handtrap-thrown clays fired at over typical live-bird hunting terrain would sharpen up their field performances considerably—and for that matter, the hitting ability of *any* upland gunner.

A trap or skeet club facing declining interest and attendance, except for a loyal group who participate in no other form of shotgun shooting sport, would benefit from inclusion of firing courses of personal appeal to hunters desiring genuine practice for upland gunning. One method would be to schedule courses of International skeet on publicized days.

Under the rules of International skeet, the ready gun must be held off the shoulder and low, a gun holding position common in hunting. Called-for International skeet targets may get instantaneous release or unpredictable delayed release—up to 3 seconds. Only when targets come into the shooter's field of vision can he shoulder his shotgun and shoot.

With coordinated, split-second precision, the firer must consciously pick up the moving target with aiming eye, shoulder his gun, and swing, firing at precisely the right moment, and with proper follow-through. International skeet demands considerably faster gun handling than American skeet.

RAWHIDE BOOT LACES—even those packaged under national brand names—have a relatively short life in our humid Florida climate.

The fault usually does not lie with quality of the product, but with the hardships and hazards of in-service use. Repeated wetting and fast drying, mildew, abrasive sand particles, and sudden jerks in lacing up boots—all take their toll. Storage of boots in a damp, unventilated closet or garage greatly increases the likelihood of mildew damage to leather. To their credit, reputable leather goods manufacturers oil treat their products to keep them soft and flexible and prevent early drying out. Neat's foot oil is a common addition.

It is exasperating to have a boot lace break on a hunting or camping trip, with no spare in your duffle bag. Usually the only alternative is to knot the broken sections, and later, when the knots have either become water-soaked or pulled themselves tight during the day's wear, spend time and effort untying them at night. When again putting on the boots, the separated lace sections must be retied.

I normally carry spare boot laces, but this last hunting season I somehow slipped up on that detail. About the second day of opening week, I had an old lace break as I started to lace up my boots. The parted sections of rawhide were united with a sturdy square knot, but two or three boot eyelets later the same lace broke at another point. Two knots in an obviously weak lace were out of the question. To my chagrin, I found that there were no spare laces in my duffle bag. Scrounging around in the bag for a temporary substitute, I came across a small hank of ⅛-inch braided red polyethylene cord.

The unbroken lace in the other boot was removed and measured, and two improvisations were cut to length from the hank of polyethylene cord. After burning the lace ends in the flame of a match to form a small ball to prevent unraveling, I effected the substitutes. The red laces looked sporty against the brown boot leather, and they certainly met the emergency.

Since smooth-sliding polyethylene cord or rope is easily tied and untied, care should be taken to finish boot lacing with a knot that will not tend to loosen or gradually untie itself. There are several such knots. Once a good one is learned, it is not likely to be forgotten. Or you can tie a bow and give bow loops a simple overhand knot and firm snugging. Whatever the finishing knot, experimental use of hard-braided ⅛-inch polyethylene cord or small rope is worthy of consideration by any reader who has suffered the annoyance of rawhide boot lace breakage afield. ●

HOW'S YOUR WATER SAFETY IQ?

By The American National Red Cross

1. After a hard game of running about on the shore and getting overheated, the best thing to do is:
   (a) Run and dive into the water to cool off ________
   (b) Wade into the water gradually right away ________
   (c) Sit down on land until the superheated condition disappears ________
2. To avoid succumbing in cold water, a swimmer should:
   (a) Swim rapidly to keep the body warm ________
   (b) Swim at a moderate pace to keep the body warm ________
   (c) Move as little as possible to stay afloat ________
3. You are swimming in heavy surf and find yourself being carried out to sea. You should:
   (a) Swim toward shore at an angle ________
   (b) Swim to one side and not against the current ________
   (c) Stop swimming and float with the current ________
4. A wooden rowboat with a hole through the bottom and carrying a proper load in deep water should:
   (a) Sink to the bottom ________
   (b) Float and still support passengers ________
   (c) Always be abandoned by the passengers ________
5. You are out in a boat in rough water and the boat capsizes. You should:
   (a) Get away from the boat, tread water, and call for help ________
   (b) Try to swim to shore ________
   (c) Hang on to the boat ________
6. You are swimming in open water and get a severe cramp in your leg. You should:
   (a) Roll over to a face-down position and massage the aching part ________
   (b) Swim to shore as quickly as possible ________
   (c) Tread water and call for help ________
7. A person fully clothed in jacket, shirt, trousers, etc., who accidentally finds himself in deep water should swim to safety using:
   (a) The American crawl ________
   (b) The breaststroke ________
   (c) The back crawl ________
8. A person who has fallen into water over his head while wearing rubber boots should:
   (a) Have to work real hard to stay up ________
   (b) Float readily as a rule ________
   (c) Sink to the bottom and stay there ________
9. A human body immersed in water should become:
   (a) Lighter than it was on land ________
   (b) Heavier than it was on land ________
   (c) The same weight as on land ________
10. All people aboard a boat, canoe, or sailboat should by law:
    (a) Have a personal flotation device available aboard ________
    (b) Wear a personal flotation device ________
    (c) Wear a ski belt ________

ANSWERS

1. (c) Sudden great change is a shock to the system.

2. (c) Exertion brings fatigue and loss of heat.

3. (b) This maneuver takes you away from the current and conserves your energy so you can swim back to shore in a straight line.

4. (b) A wooden rowboat or a canvas canoe full of holes will still support the proper load each carries normally.

5. (c) Boats usually float.

6. (a) The face-down position enables you to float while you are relieving the cramped muscle.

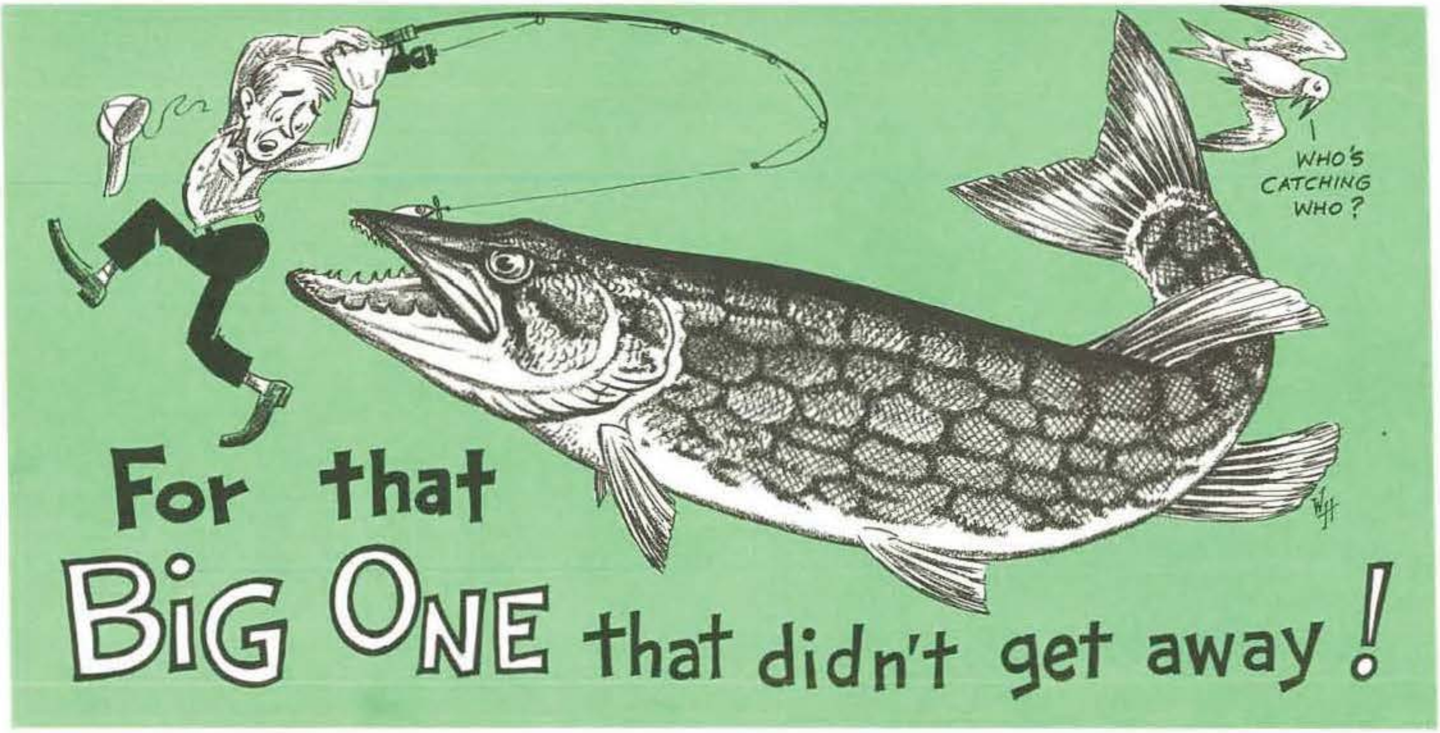
7. (b) Keep all the weight of water-soaked clothing in the water where it is lighter by far, and by so doing the swimmer makes his way to safety with less effort.

8. (b) Although the use of the legs is sharply reduced in propelling the body, the body has about as much buoyancy as without the boots.

9. (a) Water is a heavier medium than air, hence the body in water is lighter than it was in air.

10. (a) Federal law requires that each craft carry a U.S. Coast Guard approved personal flotation device, except that racing shells must be accompanied by a craft with devices for those aboard both craft. Whitewater canoeists may wear flotation gear of a specified type.

Give yourself 2 points for each correctly checked blank. The maximum score possible is 20. If you scored less than that, better investigate your Red Cross chapter's water safety classes! If you reached the top mark, you might qualify for water safety aide or instructor courses.


WHO'S CATCHING WHO?
For that BIG ONE that didn't get away!

ELIGIBILITY REQUIREMENTS
SPECIES

LARGEMOUTH BASS	8 pounds or larger
CHAIN PICKEREL	4 pounds or larger
BLUEGILL (BREAM)	1½ pounds or larger
SHELLCRACKER	2 pounds or larger
BLACK CRAPPIE	2 pounds or larger
RED BREAST	1 pound or larger

All fish must be taken from the fresh waters of the state of Florida, as defined by the Game and Fresh Water Fish Commission. Fish must be caught on conventional fishing tackle, with artificial or live bait, in the presence of at least one witness.

The catch must be weighed and recorded at a fishing camp or tackle store within the state by the owner, manager, or an authorized agent of the respective establishment.

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is available without charge, to any and all subscribers to Florida Wildlife Magazine, and their immediate families, who catch any of the fresh-water game fish of the prescribed species and size requirements. Citation, showing recorded date of the catch, will be mailed to the applicant upon receipt of the following application form that has been properly filled out and signed.

Only fishing citation applications received within 90 days from date of catch will be honored.

APPLICATION FOR FLORIDA WILDLIFE FISHING CITATION

The Editor, FLORIDA WILDLIFE Date__________
Game & Fresh Water Fish Commission, Tallahassee, Fla.

Please send me the Florida Wildlife Fishing Citation with the inscribed data listed below:

Name (please print)__________

Address __________

City__________ State__________ Zip No.__________

Species__________ Weight__________ Length__________

Type of Tackle__________

Bait or Lure Used__________

Where Caught__________ in__________ County

Date Caught__________ Catch Witnessed By__________

Registered, Weighed By__________ At__________

Signature of Applicant__________

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Mockingbird Photo By Wallace Hughes

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